



MO.SS



CARBON CREDIT
MCO2 TOKEN

WHITE PAPER
V1.0



ABSTRACT

It is increasingly urgent to combat climate change. We at MOSS believe strongly that the main solution for climate change is to develop the carbon credit market. Carbon credits markets put a cost on GHG emission. The idea is to assign value to Greenhouse Gases (GHG) resulting from production processes - thus penalizing those who emit more Greenhouse Gases (GHG), rewarding those who emit less GHG and remunerating environmental and clean energy projects. If this value or cost of GHG emission is not considered into products' values, they will have improper prices, away from an equilibrium with the environment and the planet's scarce resources. Therefore, we believe that setting a price in GHG emissions is a

dynamic way of fixing market failures. It is from this concept that the carbon credit market and trading system emerged.

Global warming is most probably humanity's greatest challenge for the next 50 years. We are in an era when companies and people will become increasingly engaged in compensating their carbon footprints. The carbon credit market is straightforward and increasingly viable as the urgency of the problem grows in the collective consciousness, and elegant if executed as we imagine. Moreover, the solution promotes positive changes on several fronts, leading to a reduction of GHG emissions and deceleration of



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global warming, preserving forests and their biodiversity as well as local communities, and encouraging sustainable technologies in production processes.

MOSS is an environmental platform, a website that provides carbon credits transactions to individuals and companies of any size that want to offset their emissions.

In the short time since our founding in 1Q 2020, we have established ourselves as the largest carbon platform and climate tech in the world. We have already transacted more than 900 thousand tons of CO₂ (comparable market value in Europe of US\$ 25

million) in just over 8 months.

Currently, we are focused on simplifying and making it easy for clients to buy carbon credits from Amazon projects because we consider that, out of all carbon credit projects, Amazon forestry projects are the ones that have the greatest impact in social, environmental and economic terms.

We believe that the ultimate objective of carbon credits is their retirement for the purposes of compensation. Tokenization facilitates users' ability to compensate for carbon emissions more easily and in a broader range of circumstances.

Our tokenization of carbon credits via



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the issuance of MCO2 Tokens, which increases the security of carbon credit transactions and trackability by further programming into blockchain an asset that is already digital, improves the possibility of composability of carbon credits.

We believe that the MCO2 Token will enable others to innovate and create new applications for carbon credits.

For example, since we have designed MCO2 Token structure to be as simple as possible, **we believe that it has the potential to become a “primitive”, or “building block” in token parlance.** The MCO2 Token will enable users to embed carbon offsetting in other tokens and smart contracts, to build applications

allowing consumers and small businesses to offset their activities and purchases and to create new applications we have not yet imagined.

The MCO2 Token does not bring innovation to markets or trading, but rather innovation in usability for offsetting.

The revolution that MOSS MCO2 Token brings is not a revolution in markets or market structure. It is a revolution of utility, programmability and composability.

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01

What are carbon credits?

01

What are carbon credits?



1 carbon credit

=



1 ton of CO2

1 Carbon Credit = a digital certificate that proves that a company or an environmental project (forest conservation projects, reforestation of devastated areas, clean energy, biomass, etc.) prevented the emission (pollution) of 1 ton of CO2eq (carbon dioxide) in a given year.



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High credibility

Voluntary Carbon credits are audited by international institutions and registered with global registries (non-profit foundations that regulate the global registration of voluntary credits), following strict global protocols.



Eternal (until consumed)

As they were certified, and as the registries establish “buffers” or guarantee funds that act as insurance against the reversibility of carbon capture, carbon credits from the voluntary market do not expire (until they are consumed/canceled by someone or a company that wants to compensate for their GHG emission).



Digital and dollarized

Carbon credits are intangible assets (similar to mileage points, brands) and are therefore digital certificates. Most credits are traded and quoted in US dollars.



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CO₂eq = carbon dioxide. In photosynthesis, a process in which plants generate their glucose (their food), plants absorb CO₂ from the air and use solar energy through their leaves to break down CO₂ (one carbon atom, two oxygen) and the water absorbed by their roots and leaves (H₂O) into carbon, hydrogen and oxygen atoms. Plants thus generate new glucose molecules (C₆H₁₂O₆) and break them down to generate energy to grow and live. As a result of photosynthesis, plants release O₂ into the air.

Additionally, plants and algae in the ocean absorb CO₂ during the day and release oxygen (O₂).

What is the problem with deforestation and forest fires? When we burn trees or kill them by cutting them, they die/rot and release the carbon atoms from their trunks and leaves as CO₂ and other GHGs are released into the atmosphere¹.

¹ Methane is also released, CH₄, a 30x more powerful greenhouse gas than the CO₂ significant amounts of GHG into the atmosphere. They absorb heat from the sun in the atmosphere, leading to the greenhouse effect and the warming of the planet. That is, when there is more CO₂ than normal in the air (and the amount of CO₂ in the current atmosphere is 417 ppm vs a historical average of 100-300), the heat from the sun's rays is absorbed by the atmosphere, and the planet gets hotter. In other words, our greenhouse gas emission and the fact that we use oil and coal as the basis for our transport and energy are warming the planet and leading to drastic climate changes.



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Furthermore, most of our global economy works based on the generation of energy by burning fossil and non-renewable fuels (oil, coal and natural gas account for 70% of energy use in the US and China). All this burning of fossil fuels, which are essentially carbon atoms, releases.

We are providing the tools to foment a new economic system and a new model for protecting the forest. That is our goal. **We believe that the solution to save the Planet and to combat climate change is in the private market.** We want companies and citizens to engage and take the lead in fighting climate change.

The voluntary carbon market is a non-mature market and has not evolved much since its

inception 20 years ago (according to Forest Trends volumes have remained largely unaltered in the past two decades). The catch is that global greenhouse gas emission since then has more than doubled, and out of the 55 billion² CO₂e tons that we emit every year, only 11 billion are compensated (retired via cancelation of voluntary carbon credits or regulated allowances). Even so, these 11 billion are a gigantic (and annual) US\$ 250 billion global market. If all CO₂ emissions in the world were compensated, the potential market would be of US\$ 1.3 trillion yearly.

² World Bank (*The state and trends of carbon pricing, 2019*)



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Voluntary carbon credits represent only 100 million tons annually³, or a market value of US\$ 300 million, or 1% of global compensation.

In spite of the fact that voluntary carbon credits are digital certificates (that certify that the emission of one ton of CO₂ was avoided in the past by a company or environmental project), the security or credibility provided currently by existing exchanges is not up to the level granted by blockchain and smart contracts.

We believe there could potentially be an important decentralization, a decrease in transaction costs and an increase in the security of transactions in voluntary carbon credits through their tokenization, that is, through their programming into smart contracts that are standardized (one MCO₂ Token = one carbon credit). It is somewhat shocking that, in the current times of rapid development of smart contracts and use of blockchain to improve transactability and standardization of highly complex contracts for many physical assets and transactions (real estate, metal commodities, credit rights and derivatives), carbon credits have not yet been translated into smart contracts in an effective way. It is relevant to point out that carbon credits are some of the first digital contracts ever created and have always followed global protocols and standards. In fact, carbon credits existed as digital

³ According to the annual Forest Trends report for 2019 (represented by organized exchanges in the wealthiest countries that are regulated and represent 23 of Global GDP).



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certificates many years before the creation of Bitcoin, but still (inexplicably) have not yet been successfully tokenized.

We believe that the tokenization of carbon credits via the creation of a simple crypto asset, the MCO2 Token (“MOSS Carbon”), in which every single MCO2 Token represents one voluntary carbon credit and has its ledger publicly available for any holder to check and audit at any time, would lead to several benefits for the voluntary carbon markets:

(a) Given the simplicity of the token structure, we aim for it to become a “primitive”, which in crypto parlance is equivalent to a “building block” that other innovators can use to create other functionalities and products on their tokens, smart contracts, fintech apps, etc. We believe that the world is beginning to incorporate carbon offsetting in industrial processes, products, services, and way of life. Today, that is hard to do because of the complexity of sourcing high quality credit and retiring them in flexible quantities.

We have designed the MCO2 Token to enable innovators to add this functionality and to easily embed offsetting in their inventions simply by plugging/tapping into the MCO2 Token. We have designed the MCO2 Token structure in a functional and flexible way to facilitate this process, including for example a mechanism for retirement that smart contracts and other algorithms can



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simply 'call' to API-style mechanisms without human intervention.

Our goal is to turn the MCO2 Token into the easiest, most functional "primitive." If eventually adopted and used by other innovators, the MCO2 Token may potentially lead to far higher consequences in terms of innovation than if it is simply bought by individuals for holding for the long term or for personal offset purposes.

We want the MCO2 Token to be more than just a product: we aim for it to be a global platform.

(b) Eliminate the unnecessary "middleman" and transaction bureaucracy. One begs to

ask: once certified and registered, why would credits need to be custodied at registries that charge prohibitively high fees for registration, custody and transactions? That is the main function of a smart contract, **to create an important layer of safety to the transaction of an asset**, since the code will always be aligned with best security practices . This safety leads to high credibility, transactability and low transaction costs, busting potential unnecessary oligopolies and abuses of market power along the way.

Historically, and until the MOSS MCO2 Token creation, **global registries have recorded manually all transactions**. There are no APIs or automated processes for transfer of ownership or retirement, which is done in aggregate batches. Projects report to



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registries via email or phone calls, or manually input the transactions, a process clearly prone to human error and lacking the digital safety available at extremely low costs nowadays. We also believe that the MCO2 Token promotes decentralization of the current carbon credit global flow structure, **as under the MCO2 Token system no single entity controls access to carbon credits or controls the market** – as it may be the case nowadays, where registries have great power on the decision of which entities enter the market.

(c) Raise awareness of the existence of the carbon market and simplify the GHG (Greenhouse gas) compensation process. Each MCO2 Token has, in its code, a link to a page at MOSS, where the holder will have the right to “burn” the token - MOSS will “retire” (cancel)

the equivalent credit that serves as ledger to the token, and that compensation will be processed in microseconds (instead of hours or many days as currently). You can check the Token [Etherscan link here](#).

(d) Finally, as well known in the crypto world, the minting and mining of crypto assets consumes significant energy, leading to significant greenhouse gas emissions. **Therefore, trading and owning crypto assets contributes to global warming.** Bitcoin’s annual electricity consumption adds up to 45.8 TWh - the corresponding annual carbon emissions range from 22.0 to 22.9 MtCO2 (or the annual emissions of small countries like Sri Lanka or Jordan)⁴. Since MOSS has

⁴ Source: “The Carbon Footprint of Bitcoin,” [https://www.cell.com/joule/fulltext/S2542-4351\(19\)30255-7](https://www.cell.com/joule/fulltext/S2542-4351(19)30255-7)



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the capacity to retire carbon credits, any MCO2 Token will already be minted and issued with a neutral carbon footprint. MOSS monitors the transactions and total ledger and constantly retires the necessary amount of credits to offset the GHG emissions from its tokenization activities. Via the tokenization, MOSS is not creating a new market either in primary or secondary trading, or in trading or retirement of carbon credit fractions (all these exist already). The Carbon Trade Exchange (CTX), for example, has traded since 2015 (both primary and secondary markets, fractional and whole) in VCS credits.

We believe that our tokenization process simply **adds a layer of security and credibility to the underlying asset, but in any other way or interpretation, the MCO2 Token is exactly like the underlying asset** (voluntary carbon credits), for which there are existing, organized exchanges for primary and secondary trading, in integer or fractional form, and which allow retirement of integer or fractional credits. Importantly, the coding of contracts into blockchain enforces intrinsic self-regulation (information technology governance, transparency, security, self-custody, etc.) and thus leads to an improvement to the quality and credibility of the carbon credit system globally.

The layer of security for the token does not unlock any value, or add liquidity, or grant further access, or increase demand for it, it simply adds security and credibility of the integrity of the transactions. **The creation of the “primitive”, or “building block,” creates the foundation for extensive innovation**



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and incorporation of offsetting into many products and services.

In order to have the highest credibility possible for its underlying ledger, MOSS carries out an extensive due diligence of the environmental projects that generate the carbon credits. MOSS only purchases credits that are certified in the most respected and credible global registries, following rigorous globally recognized certification protocols and audit procedures, and MOSS does its own legal, background and reputational checks prior to purchases. MCO2 Token buyers can rest assured that the underlying assets are among the highest quality possible in the global voluntary market.

We believe that the tokenization via ERC20 does not characterize the creation of an “investment

pool” and that it does not have mutual fund capital raising characteristics, since:

- (a) MOSS does not charge commissions for tokenization and therefore does not benefit economically from the process (unlike a fund administrator) and:
- (b) the theoretical or supposed “quotaholders” of the “fund” (the holders of the tokens) do not benefit from improved pricing of the underlying asset, the carbon credit, when buying the token and participating in such a supposed “capital pool.” The price of the carbon token is equivalent to the price of the credit itself in the existing secondary global market.
- (c) there is no financing of the credit generation or token activity, one buys existing assets in



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the market and “performed contracts”, and the proceeds from token or carbon credit primary sales remunerate the activity of the environmental projects. This remuneration thus comes from the sale of the project products (credits).

The tokens do not finance in any way the generation of credits (these have already been generated, tokens do not finance any project activity, there is no funding of “capex”, or capital expenditures).

(2) The primary function of tokenization is to grant further security to carbon credits, which are digital certificates already, but were never successfully coded into blockchain. The fractionalization of carbon credits already exists currently in the market – both the primary and

secondary trading of fractioned credits, and their retirement in fraction format. MOSS is in no way creating any new markets via the issuance of its MCO2 Token.

The main global compensation platforms in Europe and the US, for example, currently offer sales of carbon credits that happen in fractionated form in both primary and secondary markets.



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What are carbon credits?

Disclaimers

The attached whitepaper is meant to describe the currently anticipated plans of MOSS and its affiliates (together, “MOSS”) for developing a new blockchain token mechanism (“Token”) that will be used on the network sponsored by MOSS (“Network”). Nothing in this document should be treated or read as a guarantee or promise of how MOSS’s business or the Tokens will develop or of the utility or value of the Tokens. This whitepaper outlines MOSS’s current plans, which could change at its discretion, and the success of which will depend on many factors outside MOSS’s control, including market-based factors and factors within the ecological and cryptocurrency industries, among others. Any statements about future events are based solely on MOSS’s analysis of the issues described in this document. That analysis may prove to be incorrect.

This document does not constitute an offer or sale of the Tokens or any other mechanism for purchasing the Tokens (such as, without limitation, a fund holding the Tokens or a simple agreement for future tokens related to the Tokens). Any offer or sale of the Tokens



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What are carbon credits?

or any related instrument will occur only based on definitive offering documents for the Tokens or the applicable instrument.

Purchasing the Tokens or any related instrument is subject to many potential risks. Some of these risks will be described in the offering documents. Purchasers of Tokens could lose all or some of the value of the funds used for their purchases.

[Please read the Legal section](#) at the end of this whitepaper for additional information.

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MOSS carbon (MCO2) Token specifications



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MOSS carbon (MCO2) Token specifications

MCO2 (“Moss Carbon Credit”) is a blockchain-based ERC20 token that represents ownership of one carbon credit (i.e., a digital certificate in the voluntary market that attests the avoidance of the emission of 1 ton of GEE in carbon dioxide equivalent units) registered with a globally recognized registry. The U.S. Commodity Futures Trading Commission (“CFTC”) and U.S. Securities and Exchange Commission (“SEC”) recognize carbon credits as commodities akin to wheat and soybeans rather than financial instruments, securities or derivatives because they are capable of being delivered by ownership transfer and consumed through retirement or offset in compliance with the terms of mandatory or voluntary environmental programs.

MCO2 tokens can be freely transferred between Ethereum wallet addresses and can be sent to an

Ethereum address specified by MOSS to ‘retire’ the MCO2 Token (i.e., make it unusable), whereby MOSS will retire the corresponding carbon credit. The MCO2 holder consumes or uses the token for its intended function by retiring the associated carbon credit to offset emissions.

MOSS will generate an unlimited supply of MCO2 tokens based upon supply of and demand for carbon credits. MOSS mints MCO2 tokens according to MOSS’s total trusteeship of carbon credits. MOSS performs the same trustee function with respect to MCO2 as it performs with respect to carbon credits that it sells directly to its clients in non-tokenized form. The tokenization of carbon credits does not change this process in any way.

An MCO2 holder has legal ownership of an associated carbon credit by virtue of holding the



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MOSS carbon (MCO2) Token specifications

MCO2 token. The legal ownership is registered via a standardized contract called a VERPA (Verified Emission Reduction Purchase Agreement), and MOSS expects tokenization to expedite and turn this transfer of legal ownership in transactions to a safer, publicly traceable and auditable process, increasing the utility of carbon credits.

MCO2 tokens are “bankruptcy remote,” since tokenized assets are kept separate from the company’s assets. MOSS simply holds the assets in the token’s and customers’ names, and the token holders’ assets and legal ownership will not be impacted by insolvency. MOSS will make publicly available a reconciliation at MCO2 certification.moss.earth, where holders can check the total supply of tokens on the Ethereum blockchain and compare it to the regular inventory of the carbon credit market. All credits follow

global certification protocols and are registered at the most reputable global registries for the voluntary market

MOSS sends all transactions to Ethereum’s blockchain and generates events from its state via APIs provided by a third-party tokenization company, One Percent. The documentation will be held by the MCO2 token owner.

MCO2’s purpose is to provide a utility or service to the holder. MCO2 does not entitle its holder to any rights of participation (monetary, voting rights) against MOSS or against any of the environmental projects that certify and issue carbon credits, dividends, returns, votes or any other type of financial distribution. The projects’ financial and operational performance are not related in any way to the carbon credits or MCO2 tokens.

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03

Basics of carbon credit market



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Basics of carbon credit market

Demand for Carbon Credits

Demand from carbon intensive companies and individuals for carbon compensation is increasing exponentially globally.

Table 1: Market Size by Primary and Secondary Market, 2016

MARKET:	TOTAL	PRIMARY	SECONDARY
VOLUME:	63.4 MtCO ₂ e	18.5 MtCO ₂ e	44.8 MtCO ₂ e
VALUE:*	\$191.3M	\$76.0M	\$107.0M

**Market value is volume-weighted. Notes: Based on market data provided by 139 organizations. Respondents did not always respond to all survey questions; differences in the totals (for example, between the total and the sum of primary and secondary market volume) can be attributed to this. An additional 61 organizations responded to the survey but did not provide voluntary offset transaction data. These organizations either did not transact any offsets in 2016, despite looking for buyers, or only sell offsets to compliance markets now.*

There is a strong generational and global behavioral change within generation Z and the Millennials, where, according to a recent survey by the Economist, approximately 93% of this group only invest their money in social and environmental impact vehicles and buy products from environmentally and socially conscious companies. This number for people between 40 and 50 years old is 55% and for the generation between 70 and 80 years old is around 28%.

Basics of carbon credit market

Why now?

Studies show that 93% of millennials only invest with impact (vs. 28% for baby boomers and 55% for 40-50 year-olds).

40%

of family businesses globally will hand over the reins to a new generation in the next five years

93%

of millennials wish to visit every continent on earth of millennials believe social impact is key to their investing decisions

80%

of next generation business leaders say their leadership style will be different from that of their forebears



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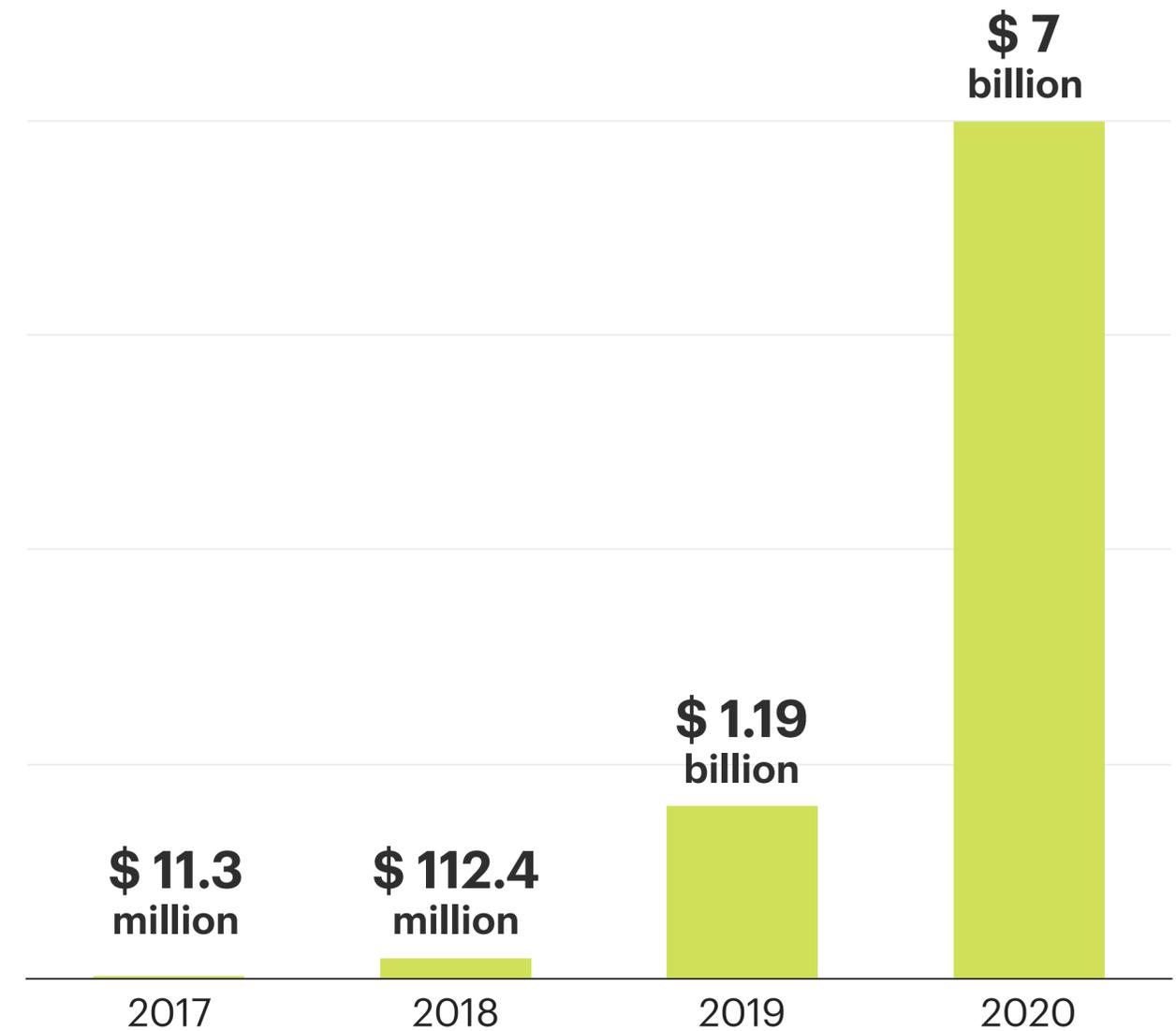
Basics of carbon credit market

In other words, the aging and growth of the millennial and gen Z generations (which already correspond to 25% of the combined populations of Europe, US and Brazil, or 256 million) should naturally lead to increasing pressure for companies to compensate. ESG flows are booming and growing exponentially: according to Morning Star, flows have increased from US\$ 112 million in 2018 to US\$ 1.19 billion in 2019 and to US\$ 7 billion (YTD) by July 2020.

In spite of the international media depiction of China as an environmentally unfriendly

Are investors more interested in ESG investing...

Flows into iShares ESG MSCI USA ETF



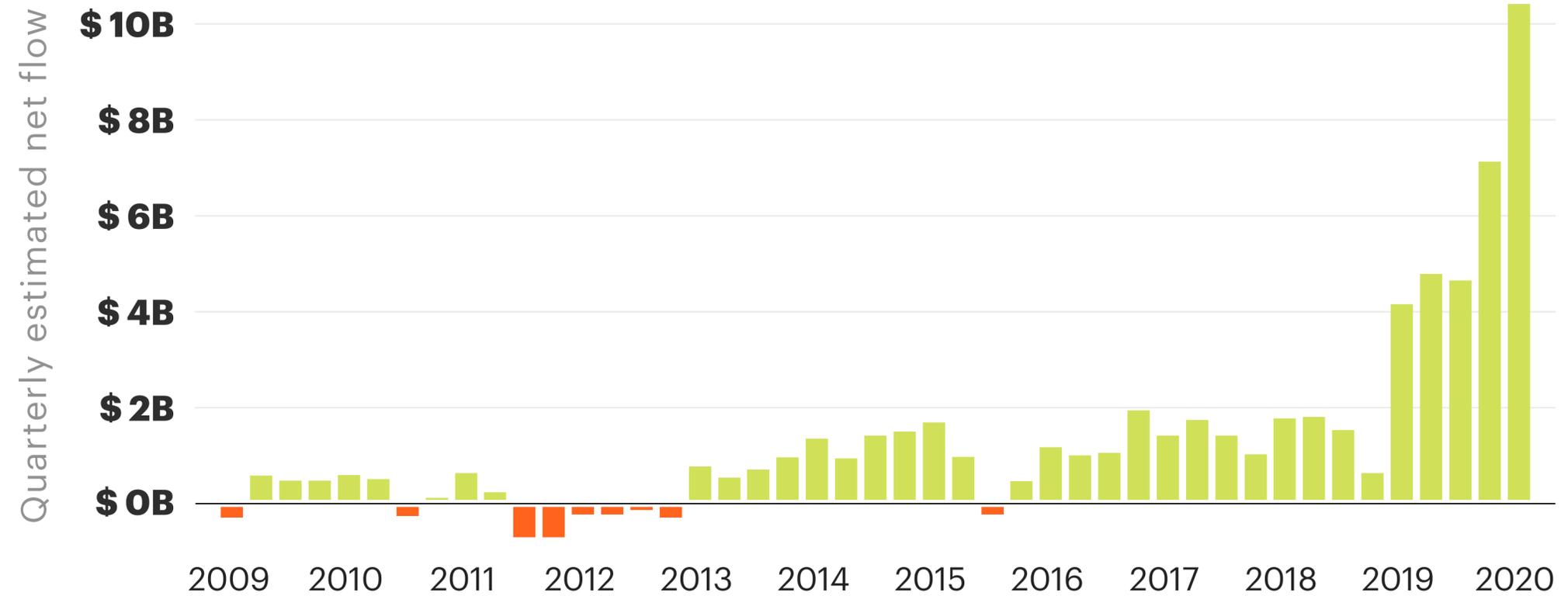
Note: Year to date as of May 8 | Source: Mornin



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Basics of carbon credit market

Sustainable funds see record inflows in first quarter



Source: Morningstar Direct, as of 3/31/2020. ESG Integration, Impact, and Sustainable Sector funds as defined in Sustainable Funds U.S. Landscape Report, 2018. Includes liquidated funds; does not include funds of funds.

nation, recent surveys demonstrate that the Chinese climate change measures are heavily underestimated. Research shows that 73% of Chinese consider climate change to be the greatest threat to society and humanity, the highest percentage globally. It is no coincidence that China started to regulate carbon markets in its top five provinces this year.



In addition, large companies such as Microsoft, Unilever, Verizon, Amazon, Delta, Jet Blue, among others, have already revealed in 2020 goals of offsetting the entire emissions from their production chain, generating an expectation of increasing demand for carbon credits and for credits from Amazon forest environmental projects. Amazon and Microsoft compensation alone represent 60 million tons of voluntary carbon credit demand per annum, or 12x the current supply of Brazilian Amazon forest credits.

Consumers are becoming ever more environmentally conscious, and this is leading people to compensate their carbon footprints and companies to neutralize their emissions.

Several corporate giants, such as Amazon and Microsoft, have recently announced neutralization pledges, and this is leading to much higher compensation activity.



Microsoft will be carbon negative by 2030



Jetblue announces that it will neutralize carbon emissions by July 2020



Amazon has announced they will be net zero by 2040, to align with goals set at the Paris Agreement.



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Basics of carbon credit market

The demand from “neutral pledges” announced thus far in 2020 (neutralization commitments, in which companies compensate their GHG emissions by purchases of credits in the voluntary market) has surged. There have been commitments from Apple, Amazon, Microsoft (since its founding in 1975), Bosch, Unilever, Verizon, Nike, Bradesco, Vivo, Vale (30% by 2030), BP, Shell, Repsol, Total, Starbucks, Mercedes-Benz, Google, Tesla, and many more. These neutral pledges should increase demand to more than 500 million ton / year. The airlines’ Corsia program, according to Forest Trends, will bring additional annual demand of 180 million per year from 2021 onwards.

On a global basis, the imbalance of supply and demand for voluntary carbon credits is increasing dramatically. Annual global voluntary transactions corresponded to 100 million tons in 2018 and a similar number in 2019. Hence, the current estimate is for 100 million supply growing probably to 150 million in 3 years and 100 million demand growing to 780 million in 2 to 3 years⁵. This imbalance indicates potentially demand for carbon credits being five times larger than supply in two to three years.

It takes 2 to 3 years on average (3 to 4 years for REDD projects) for certification and addition of offer. Global supply

⁵ Demand of 100 million, supply of 100 million, source: Forest Trends



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Basics of carbon credit market

growth is estimated at 10-20 million per year (10-20%).

As developed and wealthy countries increasingly regulate their markets, political pressure should eventually be inevitable for emerging markets to follow suit. The regulation and forced compensation of carbon emissions in developed markets lead the companies in these countries to have a competitive disadvantage (higher costs) relative to emerging market exporters, thus, we believe it might be a matter of time before lobbying by the wealthiest regulated nations at the WTO leads to the imposition of carbon tariffs against emerging markets imports. It is increasingly likely for developed

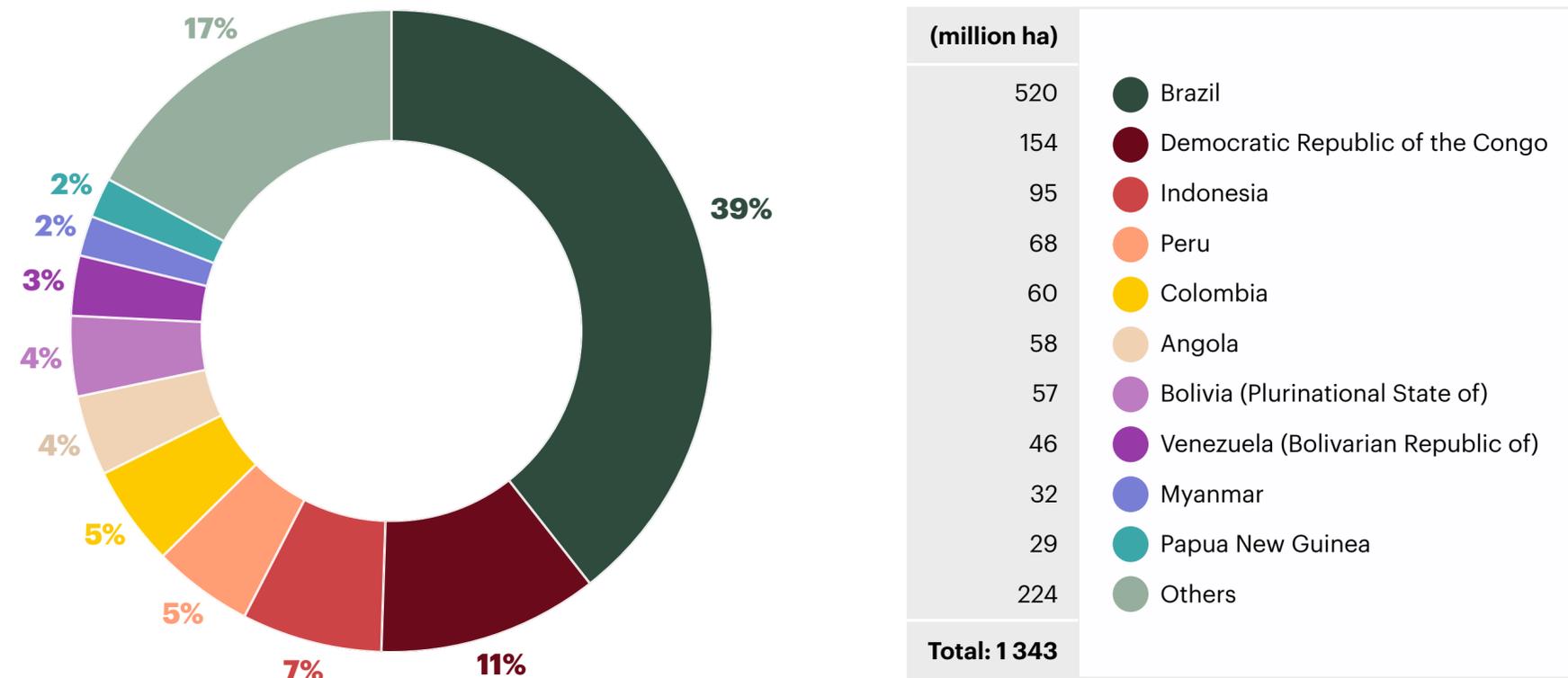
market global companies to force their suppliers to compensate for their emissions. Brazil, for example, has regulated the ethanol emission allowance market (a new US\$ 300 million annual market), which may be seen as a primary regulatory framework for the full compliance and regulation of the whole market.

How is the panorama of carbon credit supply in Brazil?

Today, Brazil is considered the Saudi Arabia of Carbon Credits, since the country has approximately 40% of the tropical forests in the world (in second place comes Congo, with 11% and then, several countries in sub-Saharan Africa and Southeast Asia).

Is Brazil the new “Saudi Arabia” of Carbon Credit?

Ten countries with the largest forest area in the three rainforest basins, 2010



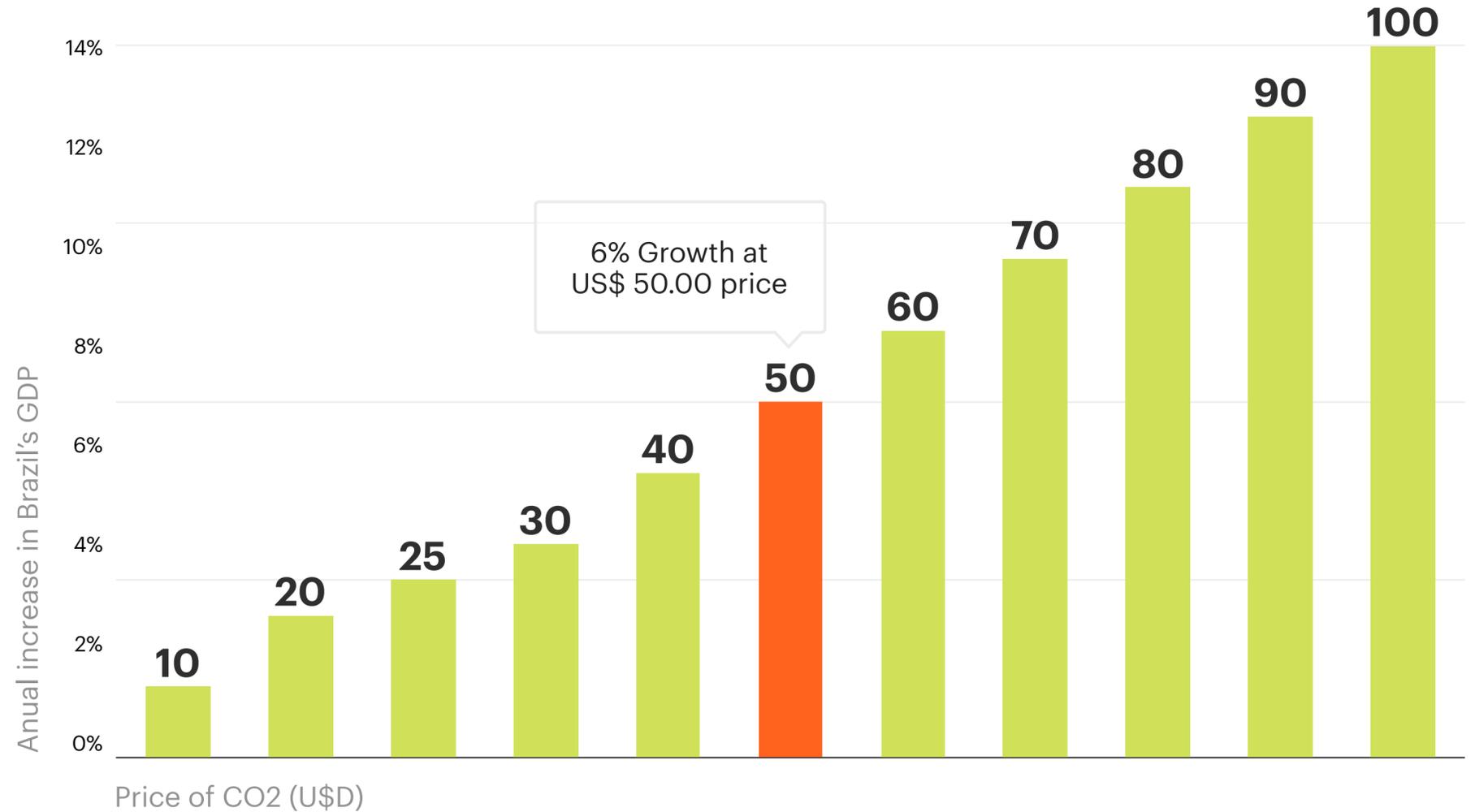
Source: OPEC, World Bank, FAO report, summit of the rainforest basins, 2011
<http://www.fao.org/3/i2247e/i2247e00.pdf>



Brazil certifies approximately 5 million tons of CO₂eq per year⁶, with the potential for the certification annually of more than 1.5 billion tons. Thus, Brazil's annual supply of carbon credits could grow by 300x. If this happens, according to Shroders, Brazilian GDP growth would increase from 2% to 6%⁷. Nevertheless, the potential supply will take time to flourish.

⁶ According to our estimates.

⁷ It is relevant to highlight that certification processes are very long and take at least three to four years, so, in our assessment, the demand and supply imbalance mentioned earlier should continue until 2023.



Source: Schrodgers: "Is Brazil the new Saudi Arabia?", <https://www.schrodgers.com/id/mt/professional-investor/insights/markets/is-brazil-the-next-saudi-arabia/>

MOSS works with partner projects that today protect a total forest area of

1 million hectares

An area equivalent to:

15 x

the area of New York City



or

7 x

the area of the city of São Paulo



Thus, we see that Brazil has a giant potential to become a major low-cost supplier of carbon credits, in addition to protecting a forest area larger than many countries around the world.

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A brief History of Carbon Credits



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A brief History of Carbon Credits

The very beginning of the carbon credit trading system and market started to be discussed at Eco 92, in Rio de Janeiro, when the United Nations on Climate Change Convention (UNFCCC) was established, as result of the first Intergovernmental Panel on Climate Change (IPCC). At that time, all countries in the world came together to discuss climate change, GHG emission and the environment. In 1997 the Kyoto Protocol was negotiated and signed, and a regulated market was implemented in 2005.

The first regulated carbon market was global and was organized by the UN. After signing the Kyoto Protocol, almost all countries in the world were regulated by entering the Kyoto Protocol, with the notable exception of the United States. The Kyoto Protocol, generically speaking, set targets for countries on a decreasing “ladder”. As an example, let’s say that the emission of a country was one billion tons in a year, considering the year 1990 as the basis for the calculation. In the following year, the target would be 950. In the next year, 900, and so on until reaching zero.

The Kyoto Treaty also led signatory countries to set country wide targets. In many regions, such as Europe, regional trading systems were created, such as the ETS (Emission trading system), with sectoral targets. The steel industry as an example has had its own goals from the outset. Let us illustratively set a target of 2 million tons per



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A brief History of Carbon Credits

year. In the case of Europe, if a Steel Company A polluted 3 million (i.e. 1 million above the annual target of 2), the company would be forced by the European regulator to buy one million CO2 certificates, or “allowances” (or “permits” to emit GHG gases), in organized carbon exchanges in Europe. In other words, Steel Company A, because it emitted more than the target / limit, would have a financial cost due to its extra GHG emission. Since the “allowance” currently costs US\$ 25, Steel Company A has a financial cost of US\$ 25 million because it emitted 1 million tons more than the target.

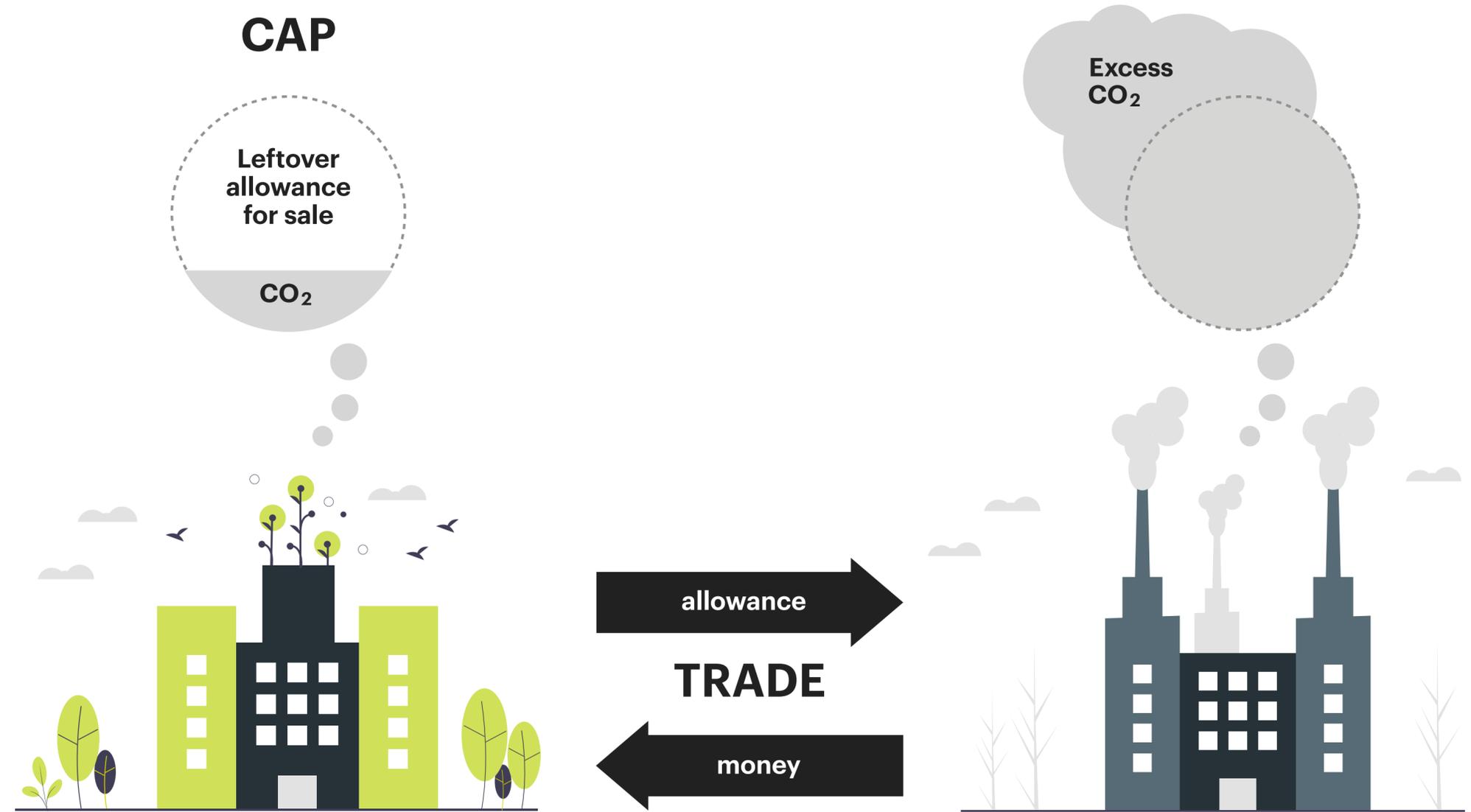
In contrast, if another European company like Steel Company B emitted (polluted), in the same year, 1 million tons of CO2 (1 million less than the target), the company would have a financial benefit by certifying the issuance of one million “allowances” that it can sell in the market. Steel Company B would therefore be rewarded US\$ 25 million for its greater efficiency. In other words, the system creates an incentive for the most carbon intensive companies to pollute less (because they have a higher cost for GHG emission above the target and it hurts their finances) and companies that pollute less have an incentive to continue researching and maintaining their best environmental practices. This is how current regulated markets work, such as the ETS (Emission Trading System) in Europe and the ETS in Chinese provinces.

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CAP & Trade: ETS (emission trading system)

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CAP & Trade: ETS (emission trading system)



Source: un environmental programme



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CAP & Trade: ETS (emission trading system)

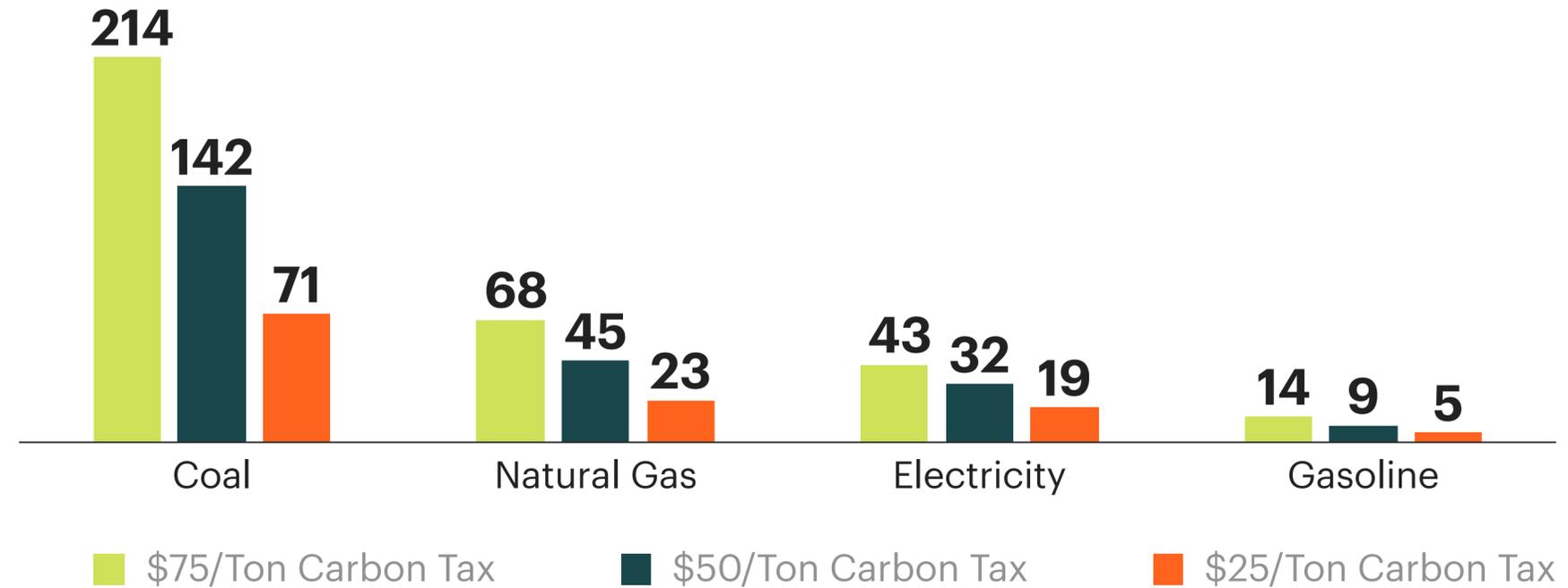
Two other carbon instruments that exist are:
(1) Carbon Taxes, and (2) voluntary credits.

The first, Carbon Taxes, are used in countries with a greater presence of the State in the economy and a greater culture of social democracy, such as Scandinavian countries and France. Experts believe that the “carbon tax” is less efficient than the “cap and trade” market system, because the carbon price could be established at too high or too low a level, as it is arbitrarily determined by the government or regulator. It can end up burdening the most carbon intensive industries in an unnecessarily high manner and causing an excessively harmful economic impact. There is also a risk that the price will be set at low levels, and that it will not lead to an incentive high enough for companies to reduce their GHG emission.

CAP & Trade: ETS (emission trading system)

Carbon Tax (Scandinavia, France)

Estimated average percent change in energy prices in 2030 due to carbon tax



Source: UN environmental programme

One must remember that the distribution of these resources across the economy may also end up being arbitrary and political. The government can decide to spend this tax revenue on health, education and part of it can disappear via corruption - in short, this money can be distributed inefficiently, and it may not end up being used in developing new, less carbon intensive technologies or encouraging new ways of cleaner production, as in the case of “cap and trade” systems.

06

How the carbon credit markets work: regulated and voluntary markets



There are several formats and structures of carbon credit markets, which co-exist concurrently.

However, they all have the same three goals:

- 1 to contain the GHG emission of the planet with positive actions
- 2 to penalize companies and countries that emit GHG above the stipulated amount by regulation
- 3 to allow building strategic inventory positions by both individuals and companies



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How the carbon credit markets work: regulated and voluntary markets

Let us begin with regulated markets. In these markets, the government establishes the figure of a regulatory body, which has the function of ensuring compliance with annual GHG emission rules and limits. Each year, the regulator determines a minimum price and annual GHG emission limit that must be followed by all companies. Due to the 2008 global financial crisis, regulated markets crashed and much of the world was deregulated.

In 2017, Europe regulated itself again and today the price of carbon credit in the European ETS is 25 euros (it was 10 euros last year). The regulator has already established a step ladder in which the price of European carbon credit will rise

by € 5 to € 10 a year until it reaches € 65 in 2026. Why is this figure 65 euros? Because there are several studies (the main one carried out by the UNFCCC) that conclude that this is the value that would lead the world to offset/neutralize its anthropogenic emissions (those caused by humans). There are other research institutions that mention higher values than 65 euros for the world's environmental balance. Respected institutes, such as the London School of Economics, for example, work with the hypothesis of 80 dollars in 2030 (11-20 times higher than current sales prices in Brazil) and 180 dollars in 2040.



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How the carbon credit markets work: regulated and voluntary markets

Still on the calculation of this equilibrium price, NASA, which has been monitoring the climate in detail for more than 70 years, has studies showing that the research assumptions that established the equilibrium prices made by the UN are out of date and underestimated. In other words, global warming and its consequent symptoms, such as the melting of the polar ice caps, extreme weather events, warming of ocean temperatures, among others, have been much greater than previously expected.

These recent higher-than-expected consequences (and higher impacts than previously projected) are likely to imply an increase in the equilibrium price of carbon credit in the future by climate research institutes.

Around the world, several other markets outside Europe are also regulated and even follow the European Market, such as New Zealand and China (70% of global GDP is regulated today - that is, these countries establish a minimum trading price and GHG emission limits by country and sector). Basically, global society is getting tired of waiting for a global system under UN regulation and global alignment, which has been delayed again and again due to political challenges.



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How the carbon credit markets work: regulated and voluntary markets

Instead of waiting for a global regulation of Article 6 of the Paris accord, the world has moved to local regulations and a push for voluntary compensation via consumption pressure.

The most populous country in the world and second in terms of global GDP, China, regulated its carbon credit market in 2020. In these markets, each credit represents a ton of carbon, equivalent to the volume of emissions that were avoided in that specific year. All carbon credits are the same around the world, regardless of how they were generated. This is an important concept as it ensures the credibility and eventual fungibility of these credits globally.



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How the carbon credit markets work: regulated and voluntary markets

How to participate in the carbon credit market

In parallel with regulated markets, there has always been a voluntary, global market with an internationally recognized protocol. In the voluntary market, companies and individuals that buy carbon credits to offset their emissions do so out of their own free will, mainly due to their goal to improve their corporate image. Consumers in rich countries are already aware of climate change and want to see the companies that provide their products acting against global warming. As a result, and as we have mentioned, many companies have announced actions to neutralize their carbon footprints.

How can an ordinary person participate in this market? Today there are thousands of digital platforms that offer personal emissions calculators (the carbon footprint). These platforms calculate the user's personal footprint, and, at the end of the calculation, offer the service of selling and canceling the credits needed to offset the footprint (effectively creating a personal user donation system for environmental or clean energy projects, generators of credits). The user transfers money to the projects, and in return gains the satisfaction of knowing that they are contributing to the reduction of GHG emission on the planet.



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How the carbon credit markets work: regulated and voluntary markets

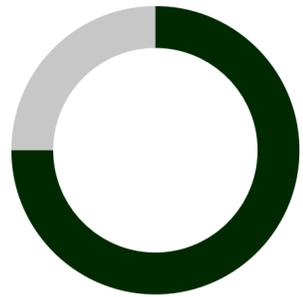
Take, for example, flying. This is the item that generates the most GHG emission for an individual. Digital platforms offer users digital calculators and questionnaires that gauge how much clients have flown in a year and sell them carbon credits to compensate their carbon footprint. As an example, in Brazil, the average emission of pollutants for each individual is around eight tons per year.

There are two types of demand in the voluntary market: from companies and from individuals. Companies are buying because there is an increasing demand from consumers in Europe and the United States so that they do not harm the environment. The number of environmentally conscious people, who do not consume products from companies that do not neutralize themselves, is growing. As an example of this thesis, 75% of Europeans who buy airline tickets have offset their carbon footprints in the past year.



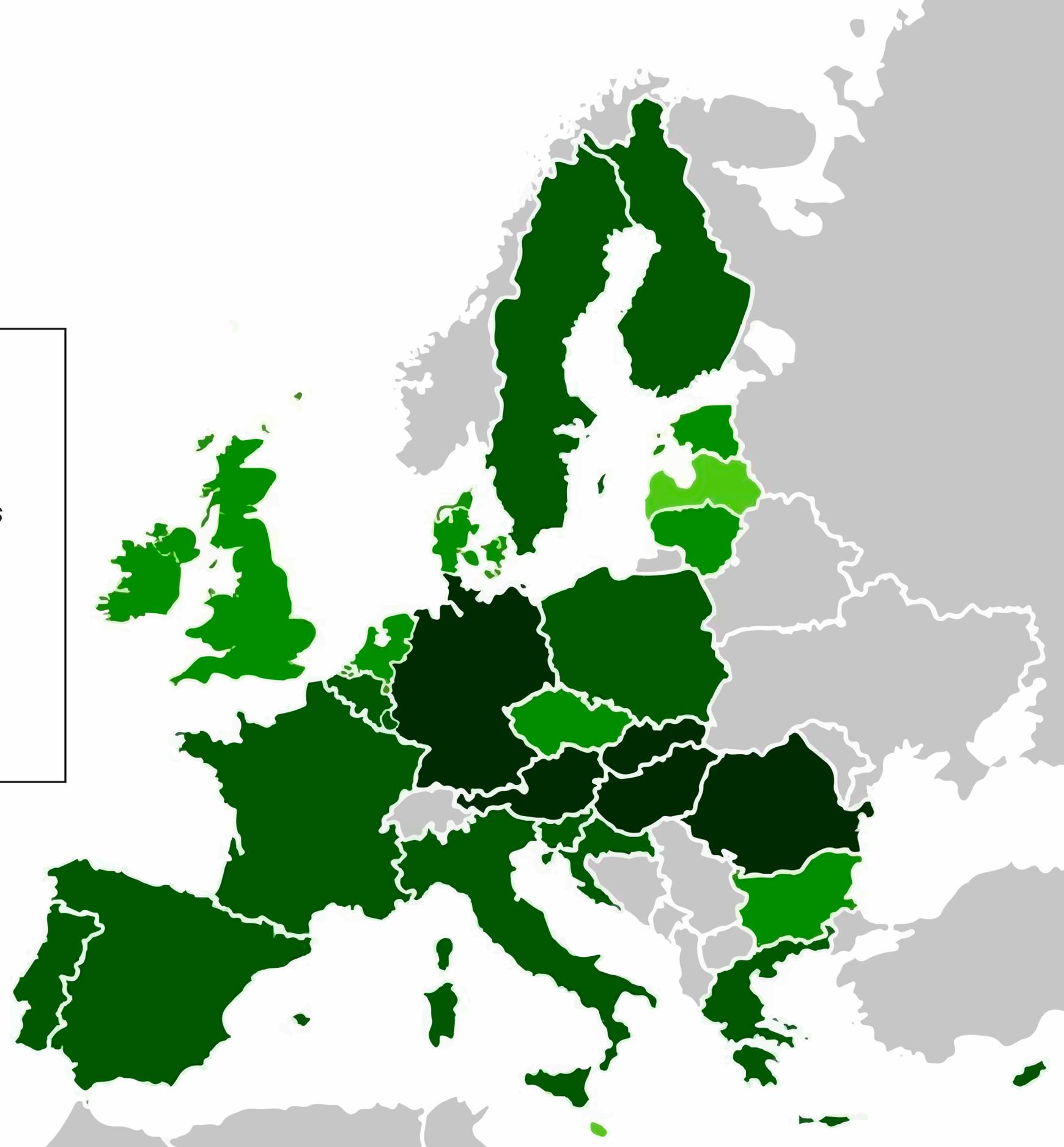
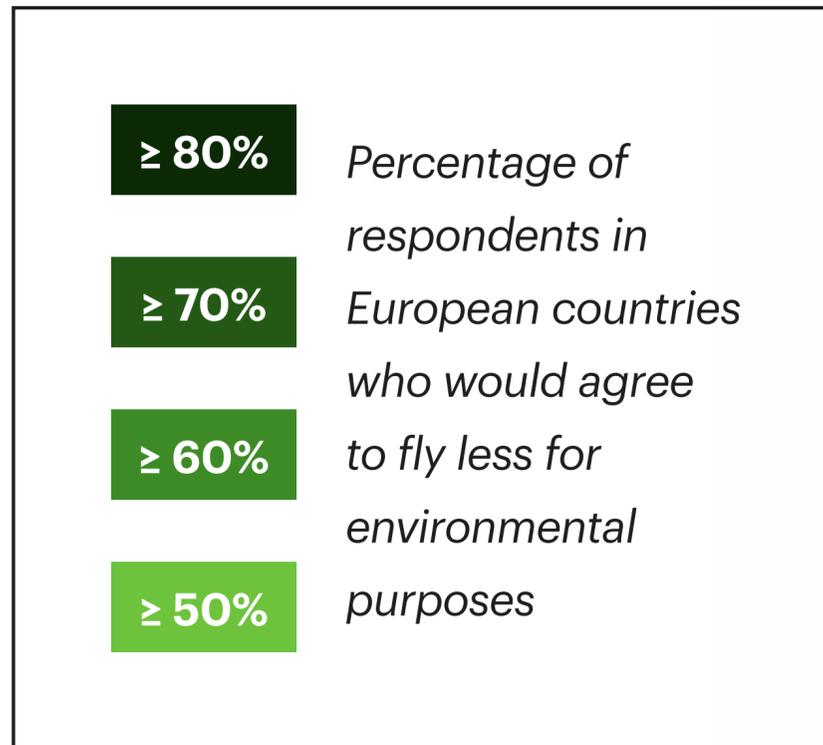
More educated and mobilized demand

EIB Climate Survey



75%

of European are committed to flying less to fight climate change



Source: <https://www.weforum.org/agenda/2020/01/climate-change-perceptions-europe-china-us/>

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How the carbon credit markets work: regulated and voluntary markets

This compensation solution is digital and today almost all European airlines have adapted their ticket sales process to offer their customers the option of personally compensating their flights. This purchase compensation practice extends to many other services and products in rich countries today: car rentals, clothes, coffee, supermarket products, etc. The mentality is changing in a constructive manner and we imagine that it will not be long before this practice reaches emerging markets.

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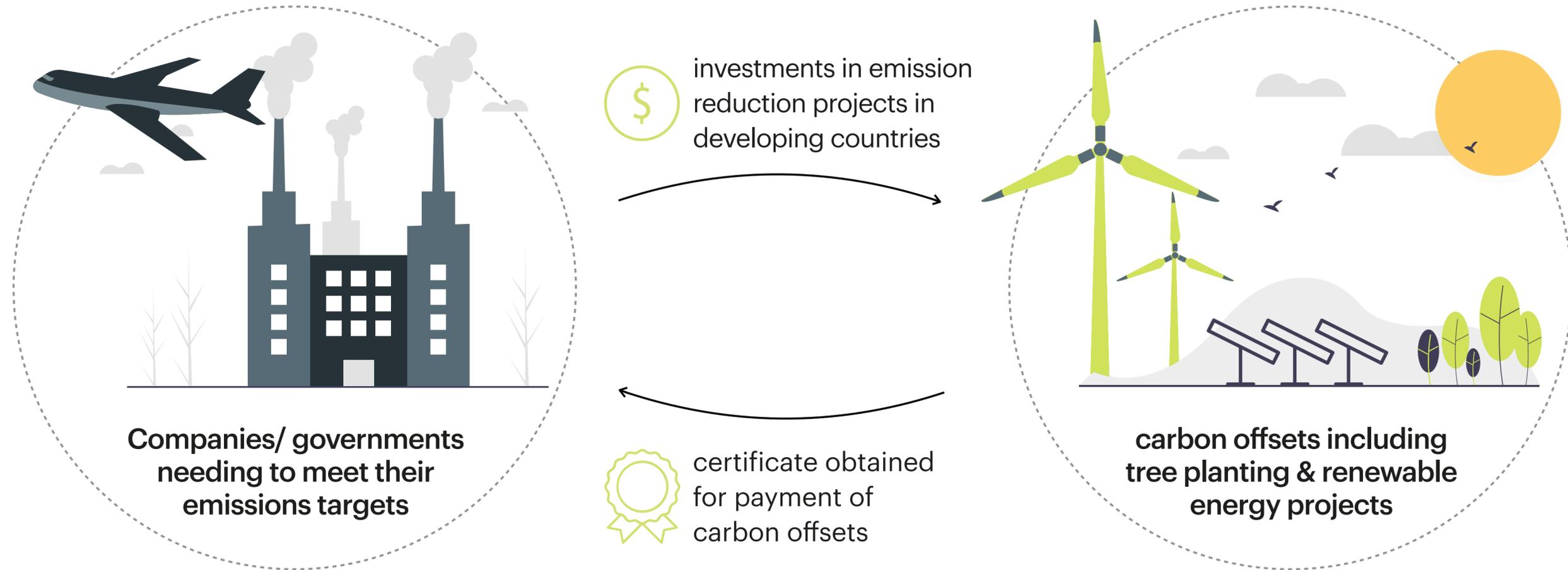
How the carbon credit markets work: regulated and voluntary markets

There are four types of carbon credit generation in the voluntary market

Who generates carbon credits in the voluntary market? There are four main types of credits: forestry, clean energy, landfill and biomass.

Starting with forests, they are subdivided between reforestation areas and conservation areas (REDD+ or “Reducing Emissions from Deforestation and Forest Degradation” projects).

Redd+ and voluntary markets





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How the carbon credit markets work: regulated and voluntary markets

Second, clean energy carbon projects are simple to understand: a company builds a wind or solar farm with the capacity to replace coal or diesel power generation. The construction of clean energy parks avoids GHG emission by another form of carbon intensive energy generation (coal-fired power plants, diesel).

The third type is the landfill. Decomposing organic matter releases a lot of methane gas, and although it is much less bulky in our atmosphere, methane is much more intensive in terms of its greenhouse impact than CO₂: 20 to 30 times more. The solution to avoid landfill GHG emission is simple: install plants or pipes to burn this gas (flaring).

Finally, the fourth type of voluntary carbon credit is biomass. In this case, the concept is aimed at small companies that have furnaces, such as small brick, tile, ceramic factories, etc. The energy used, which previously came from burning wood that was cut from local forests, is replaced by renewable fuels. Examples of these materials are sugarcane bagasse, peanut shells, fruit shells, remains of furniture, and wood shops, among several other products that are renewable. This substitution not only pollutes less, but also greatly reduces the deforestation of local biomes.

How the carbon credit markets work: regulated and voluntary markets

There are two main methods of certifying forest credits.

1. One of the methodologies focuses on the conservation of large forestry areas (REDD projects, or “reduction in emissions from deforestation and forest degradation”), which, by avoiding deforestation, avoids the emission of GHG. Indirectly, REDD projects protect the carbon stock in the forest biomass (the certification of such massive areas is more expensive, complex and time-consuming).

2. Another methodology focuses on the certification of the carbon sequestration of the air made by the reforestation of completely devastated areas (equally important, faster to certify, but much

more complex to execute - the forest is replanted as it was originally, which takes several decades).

In this second method, that of reforestation, one acquires a completely devastated area of 1500 to two thousand hectares (one hectare to give an idea of a measure is more or less equivalent to a football field). This is a simpler, cheaper to certify and quick certification methodology compared to that of protecting the standing forest, but more expensive, complex and time consuming after certification due to the planting of the trees, with a high degree of difficulty.



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How the carbon credit markets work: regulated and voluntary markets

The question of who owns the land is fundamental: it must be considered that, as they are very long-term projects, from 20 to 30 years, it is important that the manager who certifies and starts the project is there in 20 to 30 years from then. It is also essential that during the project there is no complication of disputing the ownership of the land or any legal questioning of the ownership of the credits. The credits eventually audited are registered with global registries, which are non-profit foundations that act as regulatory bodies for this market, and are responsible for the registration and certification of carbon credits. Independent environmental auditors are hired. The certifier analyzes the property and the project and verifies the validity of the property titles, whether they are formally from the project proponent, and studies the potential growth of the native forest in that deforested land. The certifier determines what type of biome originates from the area in question and checks the planting plan of the project owner for the next 20 to 30 years.

After the project is certified and validated, the manager sows native seedlings in the region. Let's say it is an area of Atlantic Forest in Brazil for example, a biome that was almost completely devastated. The project manager sows the original species in his areas and in 20 years they have a forest (given the accelerated growth of tropical forests). In this process, the certifiers calculate pro rata the amount of credits that will be generated by



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How the carbon credit markets work: regulated and voluntary markets

the growth of the forest in that area. It is important to note that forests that are growing sequester significant amounts of CO2 from the air, as they are forming their stems, trunks and leaves, and as carbon is stored in the soil. Remember that CO2 works as the raw material in the formation of plants.

Actually, amazingly enough, it is a fallacy to say that the Amazon is the lung of the world. It would be more accurate to say that the Amazon is actually the world's carbon stock and air conditioner, as the forest regulates the regional and global climate via its water vapor flows and currents. The reforestation projects of devastated areas would be more appropriately called the lungs of the

world, as there are plants growing and sequestering a lot of carbon, which in turn is accumulating in its trunks (along with other elements such as nitrogen, hydrogen and oxygen). If someone cuts or burns that plant, these elements will be emitted into the air as greenhouse gases (CO2, methane - which is 20 to 30 times more greenhouse effect intensive than CO2). In reforestation projects, it is estimated how much the growth of the original forest over the next 20 years will sequester CO2 from the air (in the range of 7 to 10 tons of CO2 per hectare). Let's say there are 10 tons per hectare and the project will sequester 20 thousand tonnes per year. In other words, in 20 years the project will have sequestered 400 thousand tons of carbon, generating CO2 certificates.



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How the carbon credit markets work: regulated and voluntary markets

To say that the Amazon is the lung of the world would be to say that the Amazon sequesters carbon from the atmosphere during the day and does not return it at night, which is not entirely true. The Amazon is a mature forest. In the status quo, that is, assuming that, from one hour to the next, all deforestation and burning ends, the Amazon takes CO₂ during the day via photosynthesis, but at night it returns that CO₂ via the respiration of its plants.

Therefore, in the case of huge areas that aim to protect forests and certify them for carbon, the idea is to protect the CO₂ stock in biomass by preventing deforestation. These projects are large areas of 150 thousand to 200 thousand hectares.

In the case of large conservation areas, the first requirement is that the area is threatened or close to the agricultural frontier. The concept here is that an area right in the middle of the Amazon is not threatened with deforestation or burning, given that humans are very far away and that it is very difficult to get there in the middle of the dense forest.

Then the project proponent has to be able to buy an area of forest larger than the city of New York on a farm that (normally) has a single continuous area and that has the indisputable property right. Well, anyone who has had some experience in agriculture



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How the carbon credit markets work: regulated and voluntary markets

and livestock in Brazil knows that finding an area with ownership rights and / or uncontested property title is something difficult and rare to find. There are usually several legal complications in determining land ownership.

Let's say that the proponent of the project buys an area and that five other owners do not appear, that is, that the purchase process does not get stuck in court, being questioned for decades. This bidder will spend an enormous amount on an area of this magnitude. Imagine buying an area the size of the city of São Paulo in the middle of Amazonas or Acre: this area will cost around 100 dollars per hectare, that is, the total value will be 15 to 20 million dollars.

Once the land is purchased, the certification process begins, which is highly rigorous. As in the past it was not such a rigorous process, the pendulum went the other way and there is a certain exaggeration in the requirements for certification today. Ten years ago, the registries were numerous in a highly fragmented sector: there were more than 50 different voluntary registries, and since it was very cheap to certify and lack of rigor in the certification, there were many cases of fraud. There were projects that managed to certify credits in six months (which should have lasted and now takes several years). Nowadays the process is much longer and lasts three or four years, it costs from 300 to 500 thousand dollars depending on



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How the carbon credit markets work: regulated and voluntary markets

the area and the characteristics of the forest. They require 20 to 30 years of satellite imagery and various geolocation data, geological data and historical deforestation records.

With this set of data above in order, the certifier takes current images of the forest via drone or jet flight to attest to the current state of the forest. Then the forest is sampled. The certifiers determine sample areas and cut and examine trees that are representative of the entire forest. To determine the sample biomass, they study the size of the typical tree trunks in the region, and finally make a rule of three (extrapolate) to determine the number of tons of carbon in the entire forest.

Let's say the number for a 200-thousand-hectare forest is 200 million tons. Let's also say that the certifiers determined that in the last 20 years or 30 years, 6 percent was deforested. It is assumed for the project that, if nothing is changed or improved, 12 million of that stock of 200 million tons (6 percent of 200 = 12 million tons) will be lost in the next 30 years. If the project manager manages to lower that rate to something less, say 1 percent, the project captures the delta, between 6 and 1 percent of the 200 million, that is 10 million (the difference between 12 and 2 million tons).



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How the carbon credit markets work: regulated and voluntary markets

The project manager requests the registration of these certificates of 10 million credits in one of the global registries, which perform an audit to verify that the Global Certification Protocols were strictly followed.

If the process is conducted correctly, the global registry allows the certification of 10 million tons on its platform. It also reserves a high percentage of these potential credits (usually 30 to 40%) to keep in a “buffer”, or a type of “guarantee fund”, so as to guarantee the ledger and permanence of credits in the case of deforestation after the project has ended. The net 6 million tons are certified in 30 years and lead to potential annual flows of roughly 200 thousand tons per year

in this example. An audit is carried out every year that costs between 30 and 50 thousand dollars. This audit checks whether deforestation was greater or lower than the assumptions made for the project estimates (the baseline, or “BAU” – business as usual scenario).

If deforestation has been greater in the past year, future flows are adjusted and are smaller than originally projected. And if deforestation has been lower, the forest has been more preserved than was being stipulated, and the future flow is increased - that is, the manager is completely aligned to reduce the forest deforestation to the maximum, because she literally makes money with each hectare that she manages to avoid deforestation.



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How the carbon credit markets work: regulated and voluntary markets

Finally, the credits, once audited, indicate that the emission of one ton of carbon equivalent was avoided in a certain year. This avoided emission becomes an asset that does not expire, since (i) one cannot change the past and since (2) the global credit buffer guarantees ledger for eventual reversion of captured carbon credits due to fires or deforestation after the end of the project.

This certificate will last until it is consumed by a carbon intensive company or individual for personal compensation. But if the project or a compensator (company or individual) holds the credit for 100 years, 100 years from now that asset will exist, and it can be sold to another company or person who wants to compensate for their own GHG emission.

Voluntary Carbon Credits are therefore dollarized and digital assets that do not expire, like crypto assets - with the advantage that carbon credits are backed by the certification and audit of the issuer's activities, so that the forestry activity is determined to be sustainable and that the project's activity is guaranteed to have prevented deforestation.

That certificate is therefore unquestionable and performed, even if the forest eventually disappears (as it is guaranteed by the global buffer) - the certificate guarantees that a certain quantity of GHG emission has been avoided in the past.

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07

About MOSS



MOSS aims to promote the preservation of the environment through Blockchain and Technology, which includes democratization and development of the carbon credit market.

In just 8 months since it was founded, the startup has traded more than

900,000

carbon credits, becoming the largest buyer of Brazilian credits and one of the largest in the world.





07 About MOSS

MOSS buys carbon credits from high-quality environmental projects that operate in the Amazon Forest (projects that emit, certify and sell credits) and that avoid or capture CO2 emissions into the atmosphere. The startup allows companies and individuals to buy these credits on its 100% digital platform, www.moss.earth, making a historically complex process simple and transparent.



Brazil has 40% of the planet’s tropical forests, but the carbon credit here is the cheapest in the world. We want to change this scenario by democratizing access to carbon credits, and thereby boosting the demand for environmental assets,” says Luis Felipe Adaime, founder and CEO of MOSS. “We believe in a market solution to mitigate the effects of greenhouse gases on global warming. An advanced carbon credit market contributes to sustainable development, and Brazil has the duty and the privilege to be the global natural leader in this sector,” says Adaime.



07 About MOSS

In 2020, Luis decided to work with sustainability in a way that has an impact and founded MOSS with the mission of combating climate change and preserving the Amazon via the creation of a digital transaction platform for carbon credits. The sector has great potential for Brazil: with the size of the Amazon rainforest, the country could certify 1.5 billion carbon credits (defined as 1 tonne of avoided emissions) per year, or the equivalent of US\$ 60 billion of flow for environmental projects, adding substantially to the country's potential GDP and to the protection of the planet.

Paulo Batista, one of MOSS senior advisors (and founder and CEO of the education company Alicerce), says:



The strengthening of the Brazilian carbon credit market is the answer of sector 2.5 on how to leave the Amazon forest standing in a sustainable way, also generating jobs and income in the forest and improving the economics of environmental projects". The executive bets on the startup as a cutting edge initiative for an ecosystem with global impact: "With future revenue from carbon credits, more projects become viable and more investments in conservation happen, catalyzing a virtuous cycle of transformation and development for Brazil, and carbon sequestration for the world ", concludes Batista.

About the Author

A Management Science and Engineering major and Economics minor at Stanford University (California, USA), Luis Adaime started his career at Credit Suisse, where he became vice president. He also worked at BRZ Investimentos and York Capital. In 2013, he founded the Armadillo Fund, one of the most significant independent equity funds in Latin America (ex Brazil), which eventually managed \$500 million. As portfolio manager of Armadillo, Luis became one of the first investors in Latam to implement ESG metrics in investment analysis.

In 2020, Luis decided to work with sustainability in a way that would have a higher impact. He launched MOSS with the mission of combating climate change and preserving the Amazon via the creation of a digital transaction platform for carbon credits. Luis believes that Brazil has the world's main forest and needs to develop its carbon credit market, combining environmental preservation with economic growth.



Luis Felipe Adaime, CFA

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08

Legal



08 Legal

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09

MOSS
dictionary

MOSS dictionary



/Why a dictionary?/

- 1 Climate change is a complex and controversial issue.
- 2 Here we gather everything you need to know to become a sustainability genius!
- 3 **Be part of this movement, join MOSS.**

Activities that pollute the most

Airplanes are responsible for **2 to 3% of human pollution**, but flights are our most polluting activity. A single round-trip flight between São Paulo and London emits the equivalent of 2 tons of carbon dioxide, or the annual average of a resident of a large city.

Cars are responsible for about **20% of pollution**, cars with combustion engines are the biggest generators of greenhouse gases among the means of transport. **Gasoline pollutes 4x more** than ethanol.

Power generation in the biggest economies: (especially **USA and China**): about 2/3 of the energy generated in these two largest global

polluters comes from coal, diesel or natural gas thermal plants, emitting high amounts of greenhouse gases.

Use of plastics / petrochemical industry: our excessive consumption of plastic products leads to unnecessary CO2 emissions.

Large-scale agriculture: feeding the animals we eat costs the environment dearly. Use of fertilizers, diesel in tractors, cattle flatulence and deforestation to create pasture and plantation areas lead to a significant increase in the emission of greenhouse gases.

Carbon credit

/1 carbon credit = 1 ton of CO₂/ 1. or CO₂ equivalent of other greenhouse gases, whose emission has been avoided in the past, verified and certified.

2. As the past is not questioned or changeable, once certified, the credit is unquestionable and perennial (until its cancellation for eventual pollution compensation). The certification process considers an overly rigorous “buffer” quantity of credits (30-40%) to consider for the case of potential future destruction of the forests that generated those carbon credits.

3. In other words, carbon credits work *like wines*: you can accumulate them forever, for as long as you like, and/or consume them (in the case of carbon, cancel and compensate for your own pollution) whenever you want.

Carbon dioxide

/CO2/ 1. Main gas responsible for global warming.

2. It is the **gas with the highest emission** (approximately 78%) by humans.

3. It is the result of the production and distribution of fossil fuels (gas, oil and coal) and the burning and **deforestation** of forests.

Carbon footprint

1. It is the *expression used to reflect the individual pollution*, of each one of us. **2.** Almost everything we do in our routine directly or indirectly emits carbon and greenhouse gases:

Flying by plane, riding in a car, using public transport, electricity, eating meat, buying plastic products, consuming natural cooking gas, among other activities.

Carbon negative

1. A company that buys carbon credits beyond and in addition to the emission / pollution indicated by its inventory, becoming a net “sequester/hijaker” of carbon from the air. **2.** The company or person absorbs more CO₂ from the air through its activities or credit purchases than emissions. **3.** Currently, most people who do not neutralize their footprints are “**Carbon positive**”. “**Carbon negative**” = “**Climate positive.**” **Don’t get confused!**

Carbon neutral

Compensate / Neutralize / be carbon neutral/

1. compensate via the purchase of carbon credits the emission of pollutants from people, companies, products and governments **2.** The proceeds of these purchases go to environmental projects that avoid the emission of CO2 or greenhouse gases, and that certify this activity when issuing carbon credits.

Climate change

1. Climate Change refers to a series of global climate imbalances caused by the greenhouse effect and global warming (which in turn is anthropogenic, that is, caused by humanity and our pollution). **2.** Earth's average temperature has increased by 1.5 degrees Celsius since the industrial revolution (last 300 years) due to man-made pollution and is expected to increase by another 2 to 3 degrees in the next 50 years. **3.** The warming of the atmosphere has led to a greater frequency of natural disasters, such as hurricanes, floods, forest fires, droughts, rising sea levels, disappearance of islands, proliferation of pests and pandemics, less agricultural production, etc.

Climate positive

1. A company or person that is a net contributor to the preservation of the environment and global climate via its environmentally conscious activity.

CO2eq

/carbon equivalent/ It is a concept that emerged to represent all greenhouse gases in a single unit of measurement, in a way that allows the carbon market to exist. All Greenhouse Gases (GHG) – methane, NOx, SOx, etc are converted via ratios of their impact to global warming to CO2 equivalent units for the measurement of pollution.

CO2 in O2

/The importance of the forests/ **1.** Plants absorb CO2 from the air in their food production (glucose), in a process called **photosynthesis**, and release oxygen (O2) into the air.

2. Thus, forests are **essential to balance the concentration of CO2 in the atmosphere.**

Greenhouse effect

- 1.** It is the warming of the planet when there is an increase in the concentration of CO₂ and other gases in the atmosphere (Methane, NO_x, SO_x).
- 2.** The sun's rays reach the Earth's surface and are reflected back to the universe – when the concentration of GHG (Greenhouse Gases) is too high, part of it is absorbed by the atmosphere, and keeps the Earth warmer than normal.
- 3.** The greenhouse effect occurs when the concentration of CO₂, Methane and other gases increases in the atmosphere, due to our pollution - this higher concentration of gases reflects the sun's rays back to the Earth's surface, leading to a greater warming of the atmosphere and a series of climatic imbalances.

GHG Inventory Scopes 1, 2 and 3

1. Technical calculation of the annual emissions of GHG (“Green House Gas”, or greenhouse gases) of a company **2.** Based on the inventory, a company is able to establish how much it pollutes per year and how much it should buy carbon credits to offset its activity, or how much it must improve its operations to reduce its environmental impact. **3.** Scope 1 refers to emissions from activities controlled by the company. **4.** Scope 2 includes the indirect emission by the company’s electricity consumption **5.** Scope 3 is optional in inventories, and refers to emissions caused indirectly by the company’s activity.

Methane

/CH4/ 1. It is one of the worst gases that cause the greenhouse effect, it is caused by the flatulence of animals, cattle, and by the burning and deforestation of forests.

2. The melting of the polar caps also releases absurd amounts of methane into the atmosphere.

3. It is 30x more polluting than CO2.

MOSS

The first global environmental platform. 1. MOSS is the plant that removes more toxins from the air, besides absorbing CO2 for its photosynthesis.

2. The greater presence of mosses in the environment indicates lower levels of pollution.

3. Like mosses, we want to filter the air and benefit the planet, by developing a sustainable and regenerative economic system, in which all participants win at the same time: local communities in the Amazon, the forest, the planet, the managers of carbon projects and you.

PPM (parts per million)

1. Measurement of gas concentration in the atmosphere.

2. The concentration of carbon dioxide (CO₂) in the atmosphere has always fluctuated in the last million years between 100 and 300 PPM.

3. Since the industrial revolution, this concentration has increased significantly due to the pollution we cause, and reached 417.2 in June 2020. **4.** It is expected that, if we do not act urgently, the concentration could reach 600-800 by 2080, leading to climatic chaos on Earth.

Redd Redd+

Reduction of Emissions from Deforestation and Forest Degradation. According to the concept adopted by the UN Climate Convention, it refers to a mechanism that allows the remuneration of those who keep their forests standing, without deforesting, and through their sustainable activity, avoid the emissions of greenhouse gases associated with deforestation and forest degradation.

Regulated markets

Cap and Trade **1.** 2/3 of global GDP, or the world's largest economies (much of the USA, Canada, Europe, China, Australia, New Zealand, South Korea) have regulated carbon markets. **2.** In these markets, the government, via a regulator, establishes a minimum price for carbon credit (called "allowances", or pollution allowances) and pollution limits by country and by sector. **3.** They usually use the "cap and trade" system, and are called ETS (emission trade system, or emissions trading system). **4.** A limit on annual emissions by sector is established (the "cap"): companies that pollute beyond this limit are forced to buy carbon credits on organized exchanges (the "trade" - therefore having a financial cost, or a "fine" for the infraction). **5.** Companies that pollute the least certify their "allowances", or permits to pollute, and thus receive a "prize" or financial reward for their environmentally responsible activity.

Sustainable development GOALS

“The Sustainable Development Goals (SDG) are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected, and in order to leave no one behind, it is important that we achieve them all by 2030.” UN.org

Sustainability

sus·tain·a·bil·i·ty

“sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” UN World

Voluntary markets

1. Voluntary market: self-regulated by a global foundation, Verra, there are two types of demand in this segment - from companies and people. More and more companies are compensating for the voluntary market because there is an increasing demand from consumers in Europe and the United States so that they do not cause damage to the environment. It is important to note that they are not regulated by any government agency and do not operate at a minimum price like those regulated.

There are four main types of credits in the voluntary market: forestry, clean energy, landfill and biomass.

**Our projects
are certified,
complying with
the best protocols
and standards in
the class.**



United Nations
Climate Change



FOREST
STEWARDSHIP
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DRIVING SUSTAINABLE ECONOMIES

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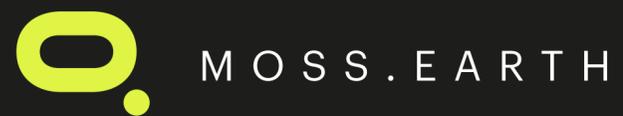
PERKINScoie

XP inc.

elected in *PitchDay* as the
company with the **greatest social
and environmental impact**

STILL HAVE QUESTIONS?

*Thank you for taking the time to browse through this overview of our business, as we've envisioned it. If you have questions related to our business which aren't answered here - just pop contact us directly at **contact@moss.earth**. We would love to hear from you.*



Let's stay connected

