

(White Paper)



# GESIA PLATFORM

Green Earth Social Impact Alliance

Collective Intelligence for Greener Tommorow

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**Collective Intelligence for Greener Tommorow**

# 01. **ABSTRACT**

# 01. ABSTRACT

The birth of a blockchain-based virtual asset called 'Bitcoin' makes it possible to fund projects based on innovative and disruptive ideas that were not supported and have been overlooked by the traditional financial market. Through 'decentralized' and 'distributed' decision-making processes in the blockchain world, group collective intelligence is gathered to now poised to dream of unlocking the possibility of more socially contributing projects toward a better world for the next generation. It is called "social impact investment," not just a buzzword.

Global Impact Investment Report in 2021 describes social impact investment as a priority shift toward the good of society in selecting investment opportunities, NOT preceding the investment return for the good of society. In fact, contrary to the common misconception that social impact investment is solely for the good of society, many social impact projects are yielding higher than acceptable returns. However, in many countries, including S. Korea, the general public misbelieves a small local cooperative project hiring elders in a coffee hut is the only form of social impact investment, which has hindered the growth of the social impact investment industry.(Bank of America)



## I GESIA Platform

01



### GESIA Community

- Participation in social contribution activities
- Point conversion from carbon emissions activities

02



### A tree planting project Carbon Reduction Activities

- carbon offsetting

03



### GESIA &CHAIN

Social Impact Platform

04



### green technology investment DAO

- carbon offsetting

04



### carbon offsetting Defi

- carbon offsetting

# 02.

# Introduction

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## 02. INTRODUCTION

GESIA Platform is NOT just a science lab-level blockchain project: It aims to overcome the limitation of existing not-for-profit environmental movements by incorporating social impact investment philosophy and fostering new cultural trends toward the common good of society. Blockchain technology has adapted to form GESIA Chain, ensuring a more transparent and sustainable ecosystem, where participants will create network effects and share the created returns and social value fairly. The following points are considered when selecting the opportunities on which the GESIA Platform will first focus.

### 2.1 Introduction and Status of Green Technology

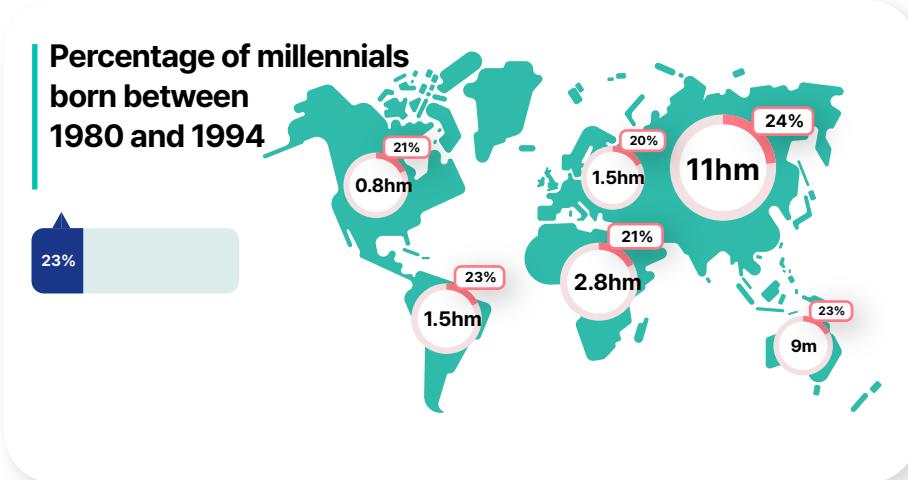
The green technology industry strives to provide more environment-friendly ways and means throughout the life cycle of goods and services. It is not limited to simply switching to alternative energy sources but includes a technology enabling energy consumption reduction by harnessing the energy management system research, agricultural reengineering, material science, hydrogen power, and other related technologies. Moreover, many of these new green technologies are aggressively aiming to restore the earth by recapturing greenhouse gas, reforestation, re-soiling, etc.

The market for green technology is still at the infant stage but attracting the interest of investors as the issue of natural resources depletion and climate change is escalating. As of 2020, the global green technology market is recording USD 120B with a CAGR of 21.9% and is expected to reach USD 900B by 2030. On November 15th, 2021, the US president on carbon pollution reduction projects, including eco-friendly electricity transmission systems, Joe Biden passed 'The Infrastructure Investment and Jobs Act, consisting of a historic investment of US 550 billion in new spending, mostly electric vehicle charging infrastructure, and cleaner public transportation, which will revolutionize the green technology industry as a whole.

The hyper-growth trend of green technology is greatly indebted to the heightened personal and corporate awareness of the seriousness of global climate change. For example, for fulfilling environmental responsibility, more and more companies are looking into alternative energy sources even at the cost of additional expenditure. Consumers are becoming mindful of the carbon footprint of the goods they consume. The shift of government regulations countering environmental crises also adds pressure on the entities to adopt greener technology sooner than later.

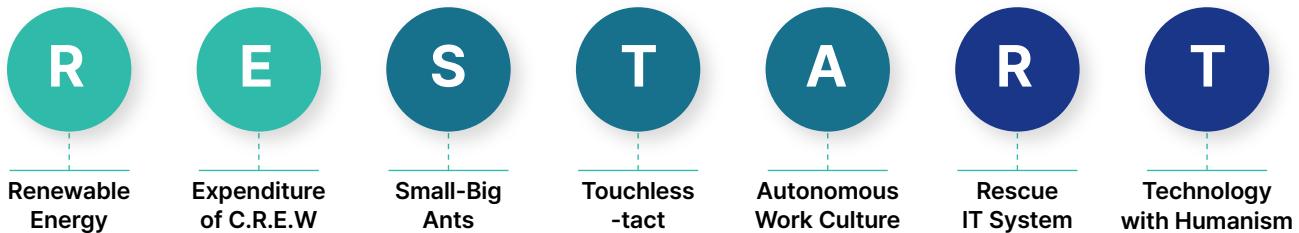
However, many green technology companies struggle to reach economy of scale due to the high cost associated with research and development, thus unable to provide an acceptable price for the consumers; the companies would procure carbon emission rights from other companies instead. In other words, many green technology companies have great ideas, products, and services, but their market entry is delayed since they do not provide sufficient cost benefits to companies that want to adopt them. As such, society needs to look into a wiser solution to support the faster deployment of green technology by lowering cost barriers.

### 2.2 New Consumers - Millennials



Millennials now account for an estimated 1.8 billion people, the largest proportion in terms of generation composition. In the case of Korea, it is 32%, well above the global average of 23%.

Woori Financial Research Institute's research on millennials explains what this generation is paying attention to through the keyword 'R.E.S.T.A.R.T.' The research revealed that millennials are highly self-motivated and fun-loving in daily activities while maintaining a keen interest in social development and environmental improvement even at the cost of many inconveniences



This generation, who grew up in a globalized and interconnected environment compared to the previous generation, is very familiar with digital technologies such as Web 3.0 and shares a deep interest in fairness and social justice. While growing up with the digital world and social media, millennials' obsession with the transparency and integrity of society may have formed naturally. They go to great lengths to strike a balance between their online persona and their real-life self and to find the truth in a flood of false news and misinformation. As they were entering adulthood, they were significantly impacted by the financial crisis of 2008 and the uncertainty of the COVID-19 Pandemic. These issues may have fortified their view toward transparency and integrity of society.

In selecting any goods and services, they demand that the products or brands they consume reflect their values and are quick to respond to their preferences. The marketing campaign of Dove is an excellent example of how brands reflect millennials' values and preferences, where ordinary people of different ethnic backgrounds appear in advertisements. Millennials' reaction to Chipotle, which uses more health-oriented natural ingredients in food and beverages, and Tesla, which is making efforts to preserve the environment through recycled energy, demonstrate what products or brands can expect when they embrace millennials' values and preferences.

Furthermore, millennials with this mindset want to know precisely whether a company is fulfilling its social responsibilities and what kind of social contribution activities it carries out if it claims to fulfill its responsibilities. In other words, when a company declares that it will be carbon neutral by 2025, they want to know if that can be achieved and how it is progressing. These unique characteristics of millennials are distinctly different from previous generations, and if a new culture that reflects their values becomes mainstream in the future, society is expected to evolve in a healthier direction.

## 2.3 Social Impact Investment

Social impact investment has proliferated over the past ten years. In the 2010 Global Impact Investing Network (GIIN) annual report, 75% of investment institutions that responded considered social impact investment was still in the early stages. They were willing to fund about 4 billion or 4.8 trillion won in social impact investment opportunities. In sharp contrast, according to the 2020 report, 69% of investment institutions think social impact investment is now entering maturity, and in 2021 alone, they had a new investment plan of about 48 billion dollars or 57.6 trillion won. The total size of the Social impact investment market is estimated to be approximately USD 715 billion, or more than KRW 858 trillion.

Globally, investors have made it clear that profit is not their only goal, and they want to show that they contribute to society through investment. An asset manager once said that 86% of its clients prefer and choose social impact investments because of global environmental issues. This is a historic opportunity not to be missed. If only 10% of the \$269 trillion of wealth owned by institutions and individuals is channeled toward investments that help improve society and the environment, the UN's 'Sustainable Development Goals,' including a carbon-neutral future, will be achieved.

In addition, according to global consulting firm Accenture, within 30 years in North America alone, about \$30 trillion in wealth will move from baby boomers to Generation X and millennials. As mentioned above, millennial investors prefer investment strategies that emphasize social and environmental impact, and for this purpose, they actively analyze investment opportunities. In a recent Barclays Investment Bank survey, the most crucial factor to consider when investing in the social and environmental impact of the investment project includes health, education, and climate change. As millennials become a mainstream society, the investment paradigm shift may be accelerated.

A healthy change has already begun in which the criteria for the choice of investors, including millennials, and the UN's Sustainable Development Goals are aligned. Many believe social impact investment will become the mainstream of the investment industry. The investment industry must discover socially responsible companies that meet these standards, connect them to investors, and provide transparent and truthful information about these companies.

## 2.4 Voluntary Carbon Offset Credit Market

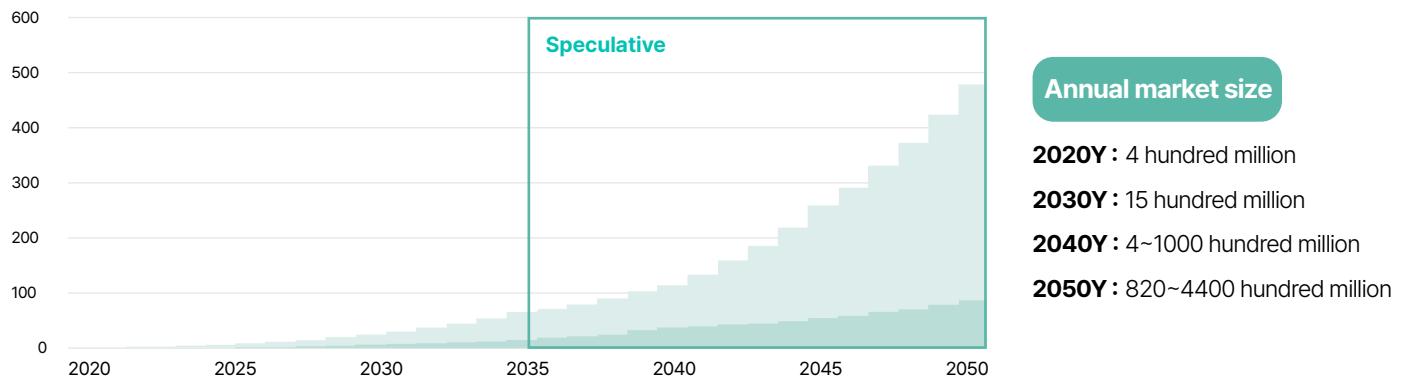
The Kyoto Protocol of 1997 and the Paris Agreement of 2015 defined international carbon emission targets that each participating country should define and manage its carbon emission targets. Companies in these countries are now looking for ways to reduce their carbon footprint to best operate within the assigned emission target. The carbon market, which makes priced units of carbon emissions a commodity and allows them to be traded, is now being introduced as a temporary measure. The carbon markets are currently divided into two categories: the carbon emission rights and the carbon offset credits markets, which offer a market-based solution to the pressing sustainability problem of the planet.

Although carbon emission rights and carbon offset credits are related concepts, in a precise sense, they have different meanings. Carbon emission rights move vertically, with companies being assigned and obtaining carbon emission rights from the government. Any unused or saved carbon emission rights can be traded in the market. On the other hand, carbon offset credits move horizontally through business-to-business transactions. When a company engages in activities to remove carbon from the atmosphere, it can create corresponding offset credits, and other companies can purchase these offset credits to reduce their carbon footprint.

$$\text{CO}_2 \text{ 1 ton} = \text{CO}_2\text{e 1 unit}$$

As a follow-up to the UN Environment Conference in Glasgow, Article 6 of the Paris Climate Agreement, officially passed on November 13, 2021, provides the basis for innovation in the private sector's voluntary carbon offset credit market. Article 6 is the last 29 articles under the 2015 Paris Climate Agreement. It defines the mechanism for carbon offset credits that each government will approve to achieve carbon emission reduction targets under the carbon credit management system that each country has decided on its own.

## Carbon offsetting market size



Paragraph 6.4 designates the UN as a final authorizer for projects that will receive carbon offset credits recognized in the respective country's carbon emission management system. The decision will enhance the credibility of the Carbon Offset Credits Trading System, enabling more carbon reduction projects and increasing the demand for carbon offset credits in the future. Section 6.4 (Sustainable Development Mechanism, SDM) also heralds a significant change in how the private sector and the government achieve emissions targets and makes us expect a quantum leap in the voluntary carbon offset credits market.



- Measurement and calculation of greenhouse gas emissions

- Reducing Greenhouse Gas Emissions

- Support for carbon offsetting activities

## 03. The Services of the GESIA

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## 03. The Services of the GESIA

The GESIA Platform will start with two services, 'social contribution services' and 'social impact investment services,' allowing participants to generate sufficient profits while contributing to society. The services are designed carefully to motivate the voluntary participation of people incorporating blockchain's network effects and various fun elements.



- social contribution service

### GESIA & CHAIN

Social Impact Platform



- Social impact Investment Services

### 3.1 Social Contribution Service

#### 3.1.1 Mileage Donation System

Not only companies but also individuals are also emitting a vast amount of carbon in their daily life. Nevertheless, there are many obstacles to managing individual carbon emissions at the government level. The reality is that individual carbon emission management can only depend on the goodwill of the individual. For example, when one travels, the usage of transportation such as an airplane or the stay at a hotel are activities that an individual emits carbon. Companies that are in travel services provide points or mileage as part of customer relationship management programs to promote repeated consumer visits. The accrued points or mileage can also be interpreted as evidence that an individual is rewarded for their carbon-emitting activities.

Many companies have been attempting to provide points and mileage exchange services for consumers to maximize the usage of earned points and mileage. Currently, the points are recorded and managed as liabilities or deferred assets in the issuing companies' ledger and are not tokenized and paid out for individuals to hold. Each exchange service provider must link to issuing companies' ledger that an integrated mileage exchange service has very limited expandability. Therefore, consumers have minimal ways to spend accumulated points or mileage, and the utilization value of the points or mileage remains low. Worse yet, many consumers do not know how many points they have accrued, and the points expire on the expiry date without the customer's full knowledge.

There is also a carbon mileage system operated by the government and local governments. Carbon mileage is paid to individuals through carbon reduction activities, but little is known. The limited budget and low compensation limit are causing a low adoption rate and poor mileage usage. Mileage provided by private waste recycling companies as a reward for collecting recycled waste such as PET bottles, cans, and wastepaper shows no different results. Individuals are not sufficiently incentivized to participate, nor can they quantitatively feel their contribution to carbon reduction by looking at the accumulated mileage on the service provider's app.

With these in mind, the GESIA platform would like to provide an integrated service that allows individuals to convert various mileage accumulated through carbon-emitting activities to carbon offset credits and erase an individual's carbon footprint. Through collaboration with companies or institutions that issue mileage, consumers can easily procure carbon offset credit or invest in projects that generate carbon offsets with the value corresponding to the mileage.

This new ecosystem allows consumers to offset the carbon they generate with the mileage they were rewarded for respective consumption. Businesses will enjoy the opportunity to enhance their image and improve their financial statements by lowering debt accrued through mileage.

For example, if a participant who has earned mileage by using an airplane decides to convert it, it is registered in the social contribution smart contract of the GESIA chain. The GESIA chain confirms this information, issues reward tokens to participants, and simultaneously requests the airlines to exchange the mileage donated by the participants. At this time, participating airlines can pay in tokens used in the GESIA Platform, and the GESIA Platform will use the tokens to procure carbon offset credit or invests in projects that generate carbon offsets as per the election of members.

### I Example of Point Donation System

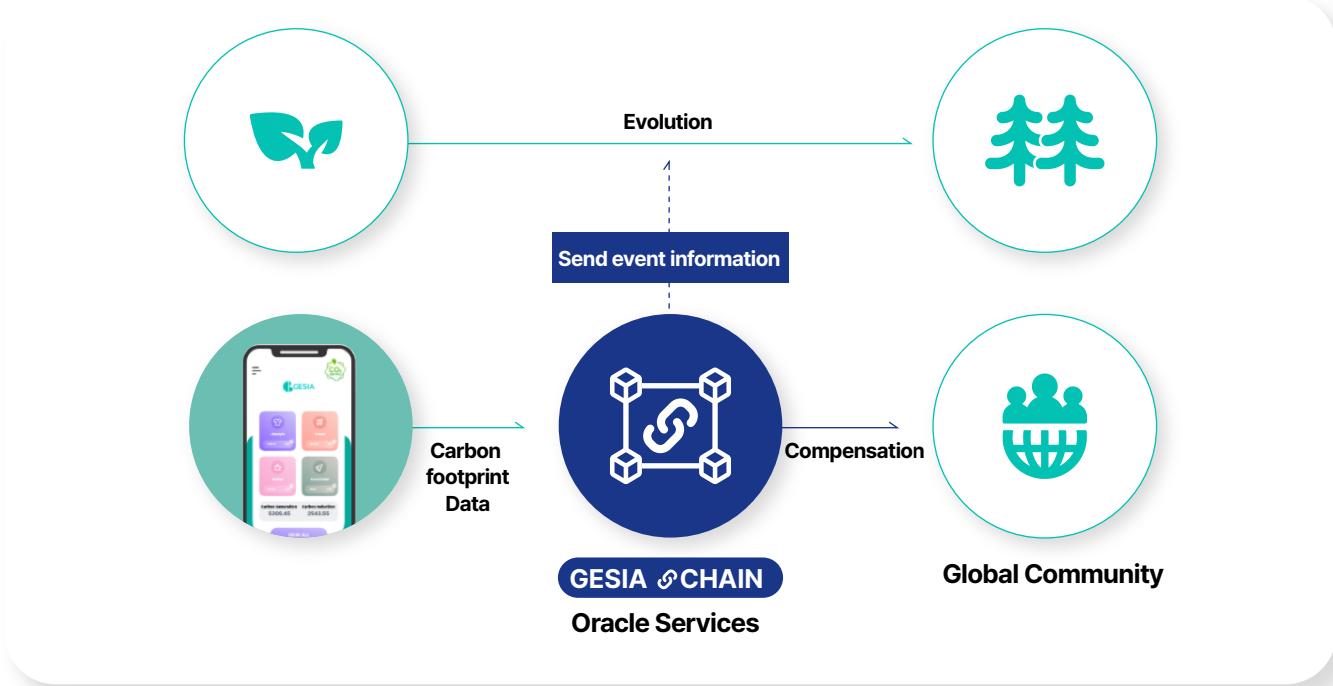


### 3.1.2 NFT Green Activity Certificate

For the first time among local government bodies in S. Korea, Daegu Metropolitan City secured 2.8 million tons of carbon credits in 2021 through the 'Landfill Gas Resource Conversion Project' registered as the Clean Development Mechanism (CDM) project of the UN Climate Change Convention. It generated about 40.8 billion won in non-tax revenue. In addition, they recently secured an additional 12.7 billion won in non-tax income by selling through external business carbon reduction certification (KOC, Korea's official carbon offset credit) conversion that can be freely traded to other entities.

The case of Daegu Metropolitan City is an excellent example that participating in projects that have obtained external business carbon reduction certification provides a lucrative business opportunity in the low-carbon economy era. The GESIA Platform intends to provide information that allows members to participate in many of these projects. In addition, we intend to share with the members the profits from carbon offset credit generating activities, either from direct participation or social impact investment.

For example, GESIA members can propose to restore damages from the historic wildfire in Yangyang, S. Korea, in 2022, and such a proposal will be conveyed to GESIA members. GSW will then organize an offline campaign and register them as certified carbon offset credit generating projects with the relevant authority.



When GESIA members participate, an NFT Green Activity certificate is issued to the participating members through the blockchain's Proof of Attendance Protocol. At this time, the geographic information of the area where the project is conducted is attached to the NFT certificate so that participants can observe changes in the area with continuous interest. In addition, a certain amount of tokens are provided as a reward for such participation based on the value of the project's carbon offset credit.

Another way to get the NFT Green Activity Certificate is to voluntarily participate in a campaign to reduce the carbon generated through daily activities by purchasing carbon offset credits. For example, the travel industry significantly contributes to climate change and accounts for 8% of global carbon emissions. On a one-way flight from San Francisco to Paris, each traveler emits about 1.25 tonnes of carbon, equivalent to a quarter of the average annual carbon emissions per person. Of course, conscious travelers also minimize their carbon footprint by reusing washed towels and blankets at their accommodation or by renting an electric car. However, no matter how demanding travelers try, they cannot avoid a certain amount of carbon footprint.

Instead, individuals can purchase carbon offset credits and use them to erase their carbon footprint from their travel. A growing number of travel agencies, airlines, car rental companies, and more are providing tools to calculate how much carbon footprint their customers are leaving with them. They may also provide a service to purchase carbon offsets through connected carbon offset credit traders. However, there is a lack of integrated services through which one can simultaneously see the carbon footprint and procure carbon offset credits.

#### Calculate Your Travel Carbon Footprint

Use our carbon footprint calculator to calculate your travel emissions and purchase carbon offsets.

**Trip Details**

Flight    Car    Boat

One Trip    Multiple Trips    Charter

Round trip    1   Economy

Newyork  Seoul ICN

**CALCULATE**

**Your Carbon Footprint**

3.52 Metric tons of CO<sub>2</sub>

**Flight Footprint**  
Flight: one trip   3.52 MT ×

Total Metric Tons	3.52 MT
Cost to Offset	\$ 43.51

**OFFSET NOW**

#### carbon offsetting Calculation and Purchase Examples

The Green Earth Social Impact Alliance platform will propose these systems to companies and service providers in Korea, and will provide services for participants to erase their carbon footprint with carbon offsetting rights they own or purchase, and will try to spread the new movement further by issuing NFT Green Activity Certificates and Rewards Tokens as a reward.

### **3.2 Social Impact Investment Service**

The Green Earth Social Impact Alliance platform is designed to serve as a window for more people to access social contribution investment opportunities. If the social contribution service in the preceding paragraph is an activity to arouse interest in the Green Earth Social Impact Alliance platform and encourage more participation, the social contribution service provides information for participants to invest in environmental areas that generate continuous and stable profits. As part of that, we provide blockchain-based services in the autonomous carbon offset market and green technology investment sectors. Tokenize underlying assets so that these investments can start at a small amount, enabling fragmentation.

Blockchain Oracle will provide accurate audit information on investment plans and share the revenue generated by sound investments with ecosystem participants to ensure that the Green Earth Social Impact Alliance platform continues to grow.

### **3.2.1 Carbon Offset Credit Trade**

The autonomous carbon offsetting market was created with the aim of enabling finance to help reduce greenhouse gas emissions. It is true that in the early days, it was simply written off as a new attempt to respond to environmental changes. Over time, however, the autonomous carbon offsetting market has become recognized as a mature and effective channel of contribution, objectively verifiable and heavily funded projects to reduce greenhouse gases on a global level.

The autonomous carbon offsetting market helps companies achieve more aggressive environmental goals in addition to their own efforts to reduce greenhouse gases. As of the end of 2019, 68 million tons of carbon were offset by the autonomous carbon offsetting market, the same effect as 130 million vehicles disappearing a year.

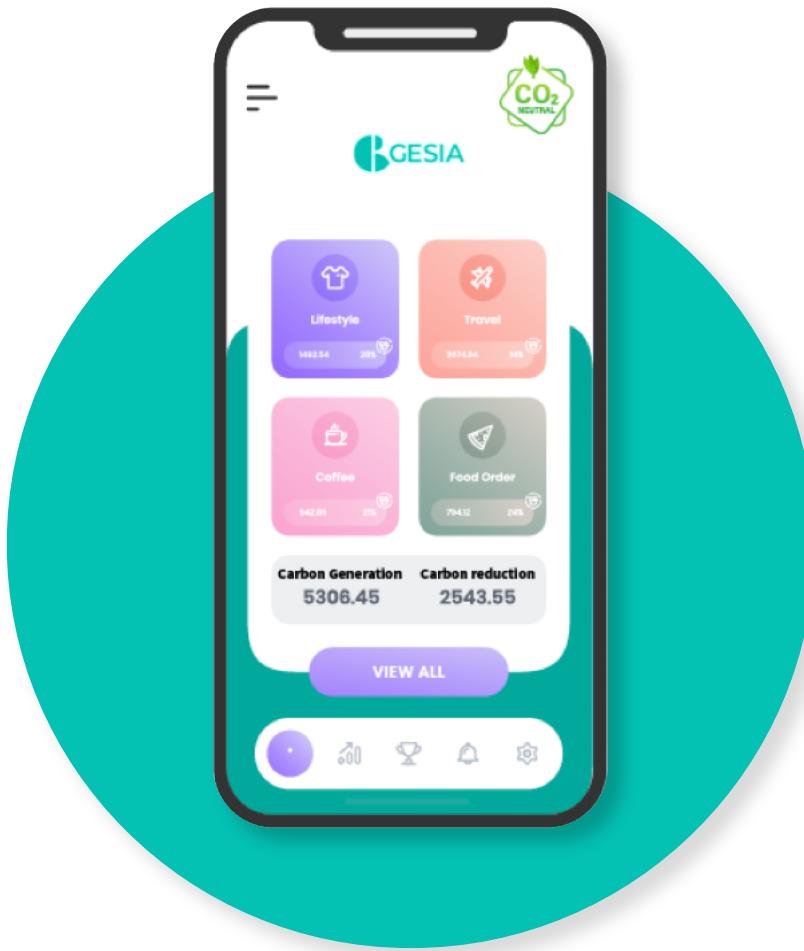
Bloomberg reports 'Long-Term Carbon Office, predicted that the price of carbon printing rights will be low from \$47 to 2050 to 20500. This is necessary to pay more than 50 times, so it is necessary to pay more than 50 times. In particular, as the authentication process of carbon printing rights are defined as the source of carbon printing rights generated in the future, and the price difference depending on the level. If the carbon print rights generated in activities, storage or quarantine will be applied to carbon neutrality goals, storage or quarantine will lead to a long-term price increase compared to the market demand.

To facilitate participation in this highly growth-oriented carbon offsetting market, it provides an intermediary platform for investing in various virtual assets in sustainable carbon offsetting, and provides blockchain-based services that individuals can own and trade with. All records of these transactions will be recorded on the blockchain and will always be managed transparently.



GSW is proposing the aforementioned integrated system to various companies and service providers in S. Korea and making good progress. When participating companies and service providers elect to provide services so that participants can erase their carbon footprint with carbon offset credit, the GESIA platform will provide Restful APIs and supports that allow easy integration without much initial investment or time.

### 3.2.2 Carbon Footprints



The concept of carbon footprint comes from a book published in <Our Ecological Footprint> in 1996. Due to various phenomena caused by recent climate change, the Earth is now global

It became widely known as a red issue, and a calculation formula that tells how much carbon is emitted can calculate the carbon footprint, and users calculate and dataize the data using the Jessia App and provide it to Smart Contracts.

#### • Carbon Footprint Calculation Formula

Name : GESIA

Person : 1s

Local : City

#### HOME

<b>Gas</b>	LNG usage	m <sup>2</sup> / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	2.22
	LPG usage	kg / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	3.61
	Kerosene usage	L / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	2.49
	briquette usage	per / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	6.27

Through the GESIA App, carbon footprint can be recorded and smart contracts in proportion to accumulated data and reduction rates provide transparent and fair compensation to those who contribute under predefined conditions.

<b>Water</b>	water consumption	m <sup>2</sup> / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	1.53
<b>Electric</b>	electricity consumption	kg / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	0.42
<b>Trash</b>	garbage emissions	L / Monthly	CO <sub>2</sub> Generation	0.00kg (CO <sub>2</sub> )	0.09

#### Traffic

<b>Car</b>	gasoline(compact car)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.18
	gasoline(small van)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.25
	gasoline(medium-sized van)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.21
	gasoline(large van)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.235
	diesel(small van)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.24
	diesel(medium-sized van)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.315
	LPG(small can)	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.19

#### Public Transport

<b>BUS</b>	Min / number of use	Min / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.00574
<b>METRO</b>	Min / number of use	Min / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.00004

#### Train

<b>Train</b>	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.18
<b>KTX</b>	Distance	km / Monthly	companion CO <sub>2</sub> Generation	1 0.00kg (CO <sub>2</sub> ) : 0.25

### 3.2.3 Green Technology Decentralized Autonomous Organization

The GESIA platform is not just a trading brokerage platform but a community of millennials who think deeply about the future of society. The GESIA platform will be built on a blockchain protocol that allows all participants to discover new green technologies quickly, share them with the community, make investment decisions collectively if so voted, and form a Decentralized Autonomous Organization (DAO) for the investment execution and management.

DAO is a decentralized autonomous enterprise, an organization without centralized leadership or hierarchies, where all decisions are made through democratic voting. DAO is considered the most appropriate investment structure in the Web 3.0 era, with its highest regard for individual sovereignty. The investment process will also evolve so that any participants can identify investment opportunities, propose to each other, form an investment pool, and collectively agree on an investment.

A DAO's main characteristics are transparency, open participation, and democratic decision-making. Each token holder has the right to vote according to the number of tokens they hold, which process is governed by the rules or bylaws (Smart Protocols) defined in the smart contract. A democratic vote of members may also change these bylaws. Among these DAOs, 'Funding DAO' is a type of decentralized autonomous enterprise that focuses on investment activities to create wealth with the funds from participating members.

The GESIA platform will provide the necessary services for these decentralized autonomous organizations to operate safely and efficiently. We will ensure that both the person making the proposal and the person voting for it receive a particular reward token. The opinions and evaluations of various external experts are also connected to the blockchain oracle service, and specific rewards are given to experts who provide these opinions and evaluations. This reward system incentivizes more participants and experts to participate in the ecosystem actively.

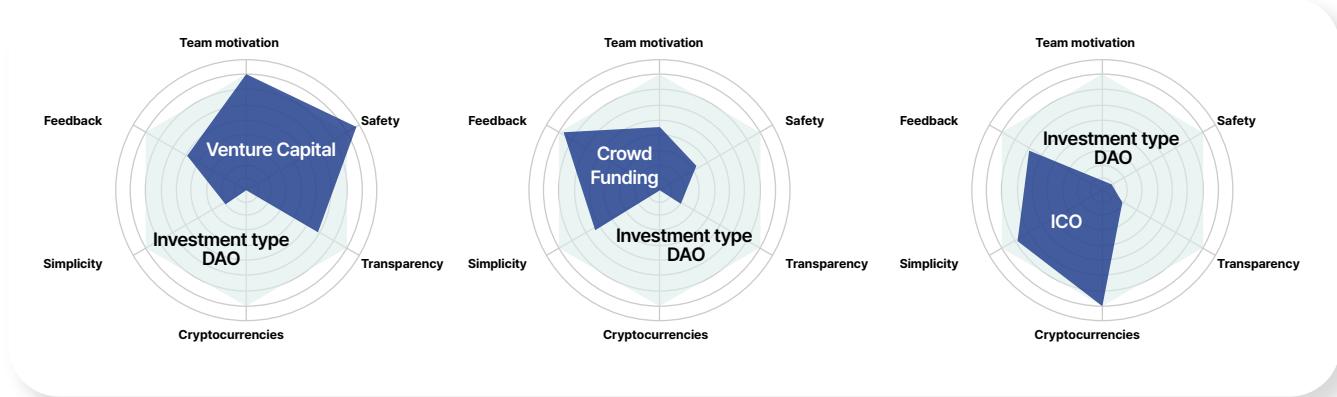
#### I Distributed Enterprise Investment Process



The project receiving the investment and the DAO will form an intelligent contract so that the investment fund will be disbursed only when an event with predefined conditions is met. This phased disbursement will solve complex problems for existing venture investors, crowdfunding, and ICO (Initial Coin Offering).

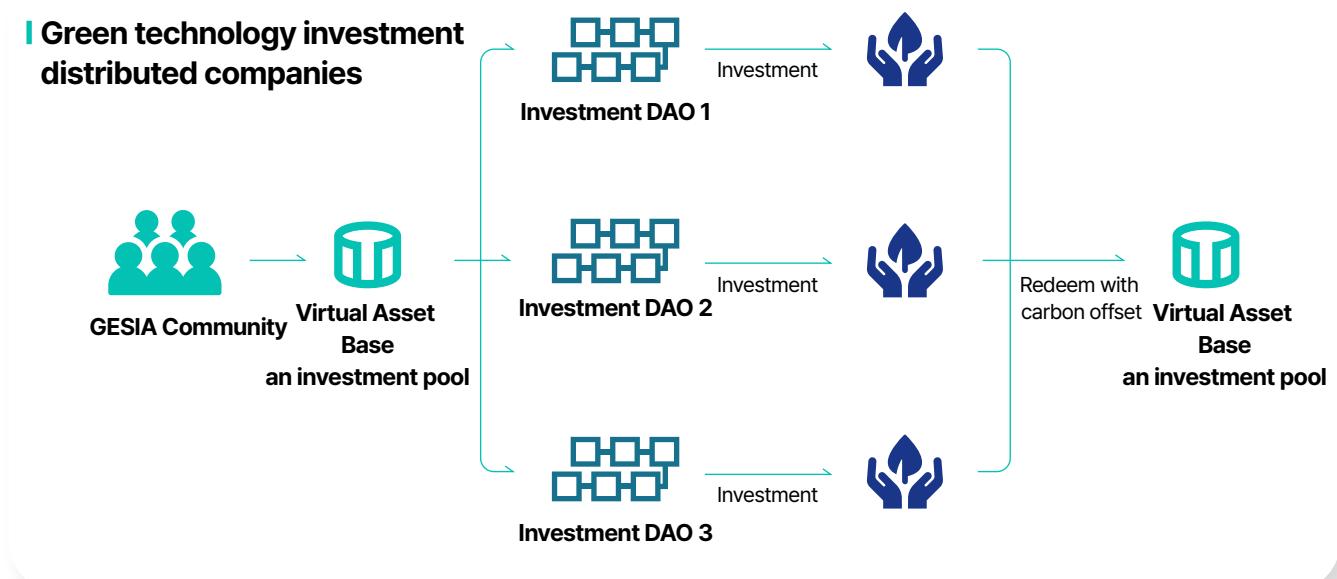
The Fund for Investment is not owned or managed by any company or individual. It is deposited in a smart contract called a DAO and is only spent according to the withdrawal proposal of the project receiving the investment. At this time, the token holders of the DAO will review the withdrawal proposal, confirm the project's progress, and then approve it.

This procedure alone will reduce the investment risk of demotivation and the moral hazard of project operators, which is a serious issue with many ICOs or crowdfunding. If most holders of decentralized autonomous tokens determine that the project is not proceeding as promised, the investment may be withdrawn. This possibility of withdrawing investment can increase the likelihood of project success by keeping the project operator focused.



The critical point is that the GESIA platform never solicits investment from members or directly engages in the investment activity itself. The GESIA platform provides participants with valuable tools to verify information, which the social and environmental values of the projects meet global standards. The verification of such information is also provided in a decentralized manner through the blockchain oracle service. The GESIA platform will strive to remove any shortfalls and risk factors in the traditional centralized investment and verification process using blockchain technology.

The funding DAO provides many benefits for project operators as well. Many benefits include a decentralized decision-making structure harnessing collective intelligence, transparency in business relationships, more convenient communication, and complete independence. Connecting with the ecosystem that provides these services will provide even greater value in securing potential customers. Investment-type DAOs are modularized so that the governance structure or function is set accordingly to the characteristics of each project.



## 04.

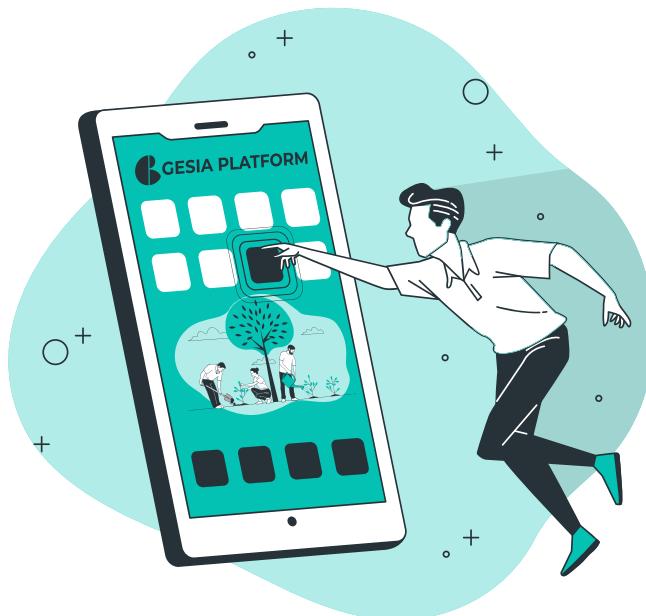
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## 04.GESIA CHAIN

While Bitcoin and Ethereum are public blockchains that require a high carbon footprint by design, GESIA Chain has a hybrid architecture to reduce the carbon footprint of the blockchain. GESIA Chain works as a sidechain with lightning protocol to ensure high transaction processing speed and is limitedly anchored on the public blockchain to maintain network compatibility and stability. As the main anchoring chain, GESIA Chain intends to fork Bitcoin, which has verified security and stability for an extended time.

### 4.1 Carbon offset chain project: GESIA



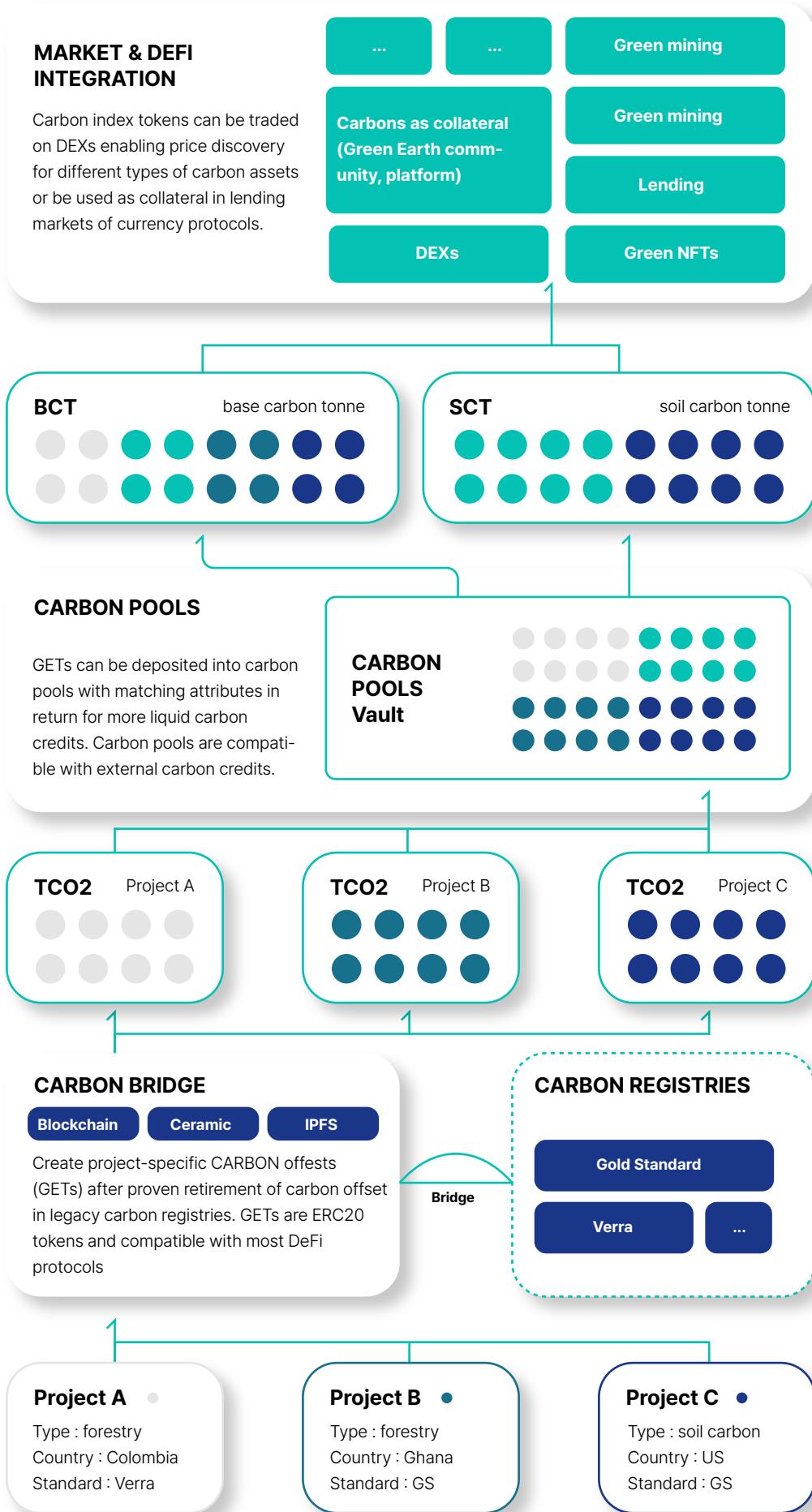
Carbon offsetting is already a close concept for us. It is also an essential action to live on Earth. So all the people living on Earth -- individuals, groups, businesses, countries -- must work to offset carbon. In this context, more than 330 global companies such as Apple, BMW, Google, and Wal-Mart have already declared RE100 and ESG investment.

However, while large corporations, countries, and local governments have easy access to carbon offset emission rights, small businesses and individuals do not have easy access to emission rights. Also, it is true that it is not possible to properly verify that the money raised for a series of purposes, such as other volunteer organizations, is actually used for the purpose. In addition, the selection of projects to support projects for carbon offsetting is often supported through opaque screening criteria. This undermines the trust of community members, resulting in a vicious circle of increasing the cost of society as a whole.

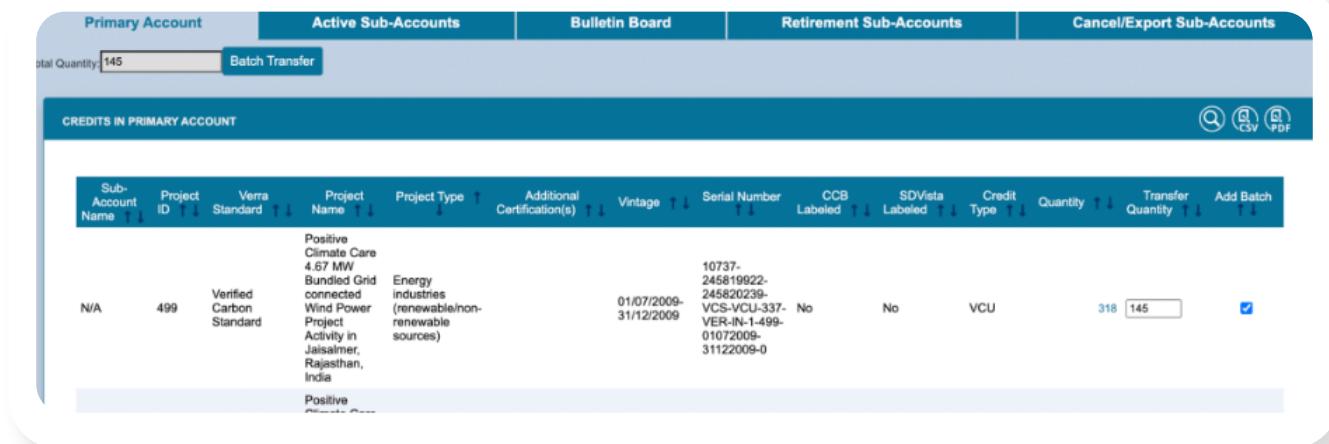
GESIA is carbon offset chain project solves this problem. The GESIA chain is formed based on the carbon offset right. The NFV (non-fungible Voucher), issued based on the carbon offsetting rights held, becomes the basic coin that proves the carbon offsetting rights worth 1 ton. These formed NFVs are divided into carbon offset NFTs of approximately 100g to 1kg, issued and matched to facilitate easy access to carbon offset by small businesses, individuals, and groups.

#### 4.1.1 Carbon Offset Tokenization

GESIA's underlying token, the Green Earth Community Token (GET), is an ERC-20-based virtual asset on a public network that allows more participants to participate in the ecosystem and can be swapped with Green Earth Coin (GEC) available on the GESIA platform. GEC is a stable coin whose value is fixed upon issuance for use in various projects of the ecosystem on the Lightning Protocol, and can be used as a token for trading carbon offsetting rights representing a tokenized carbon tone basket.



The key characteristics of carbon offsets trading carbon footprint carbon offset are brought into on-chain when data is converted to Carbon Bridge.

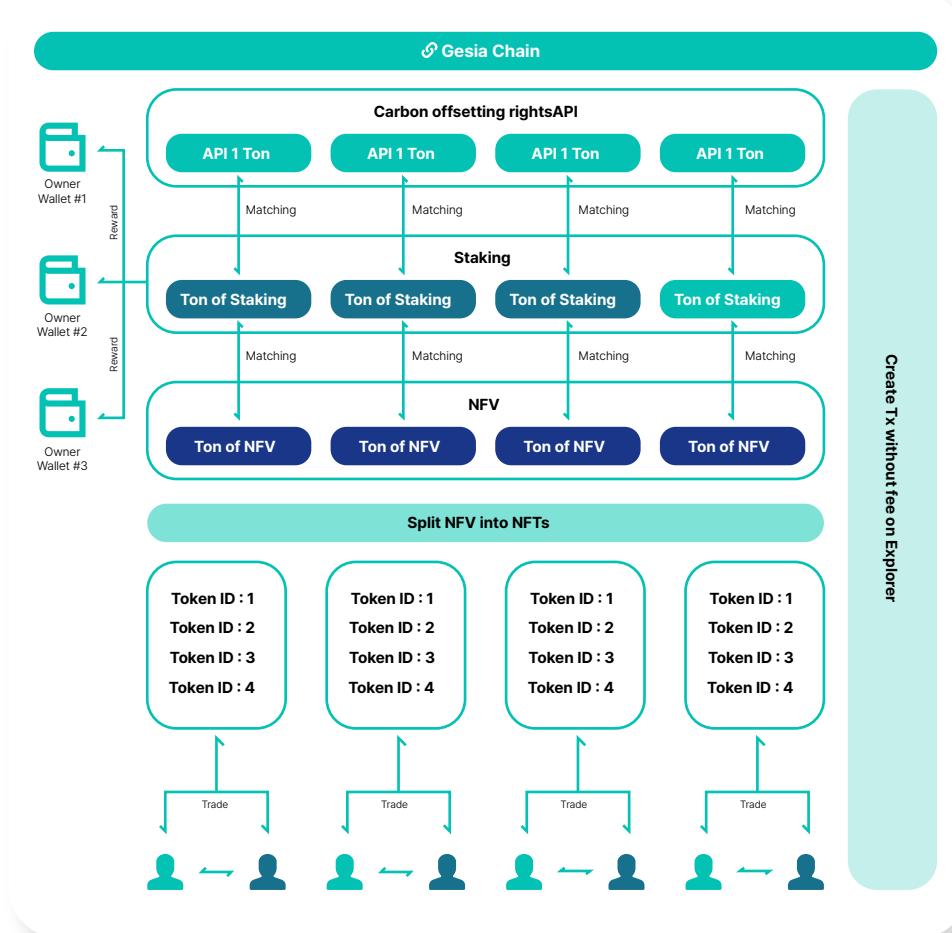


Sub-Account Name	Project ID	Verra Standard	Project Name	Project Type	Additional Certification(s)	Vintage	Serial Number	CCB Labeled	SDVista Labeled	Credit Type	Quantity	Transfer Quantity	Add Batch
N/A	499	Verified Carbon Standard	Positive Climate Care 4.67 MW Bundled Grid connected Wind Power Project Activity in Jaisalmer, Rajasthan, India	Energy industries (renewable/non-renewable sources)		01/07/2009-31/12/2009	10737-245819922-245820239-VCS-VCU-337-VER-IN-1-499-01072009-31122009-0	No	VCU	318	145	<input checked="" type="checkbox"/>	

- Project Name
- Serial Number
- Project type (renewable energy, forest carbon project, blue carbon, etc.)
- Vintage Year
- Verification Standard

It can represent carbon offsets from different projects (such as forestry projects in Brazil or soil carbon projects in the United States), but standardization is needed to create a whole-body market for carbon. That's the role of a carbon pool

The structures that make up the GESIA chain are carbon offset API, Staking Pool, Non-Fungible Voucher (NFV), Non-Fungible Token (NFT), Mining it consists of .

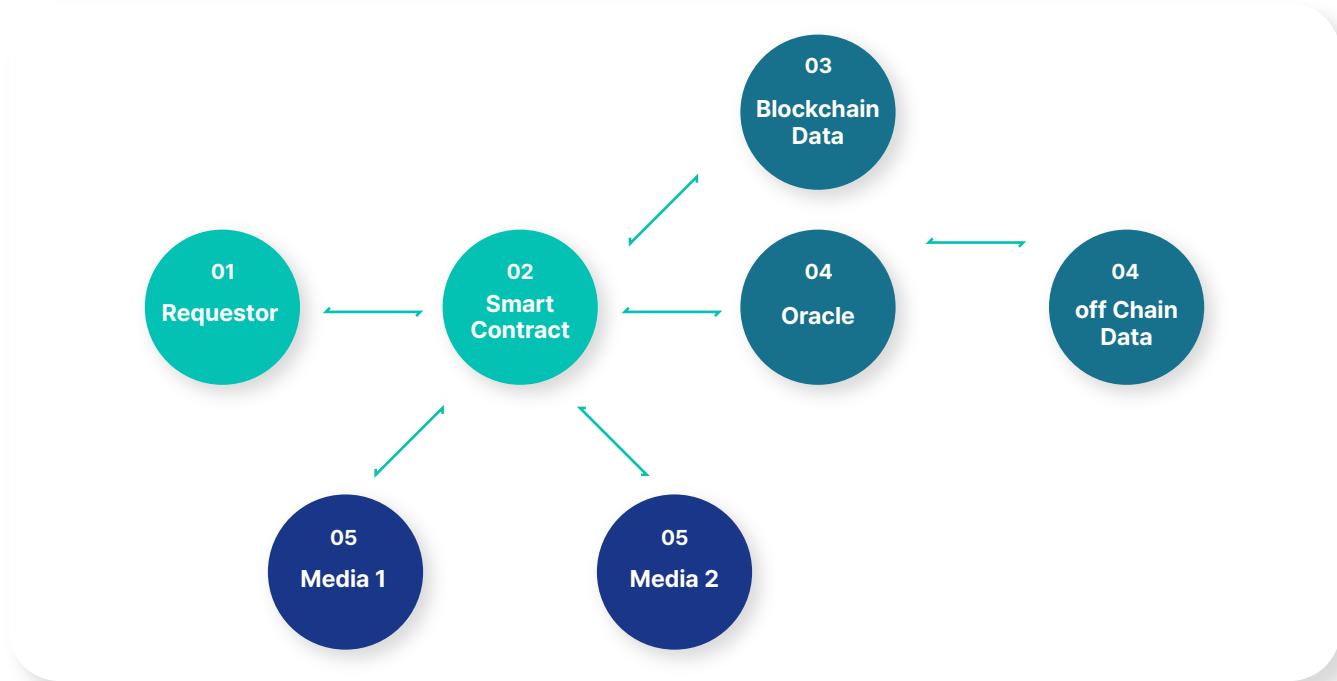


Owners with NFVs may issue NFTs by dividing units into the smallest units (Kg or g) that can be traded with individuals or companies. Each NFT is issued in installments according to the unit specified by the owner, increasing transaction efficiency.

All actions such as matching the carbon offset API to the staking pool, matching the staking pool to NFV, NFT issued in installments through the NFV backbone, compensation through the staking pool forecast, and NFT transactions generate Tx values, which are recorded in the GESIA chain. In addition, no fees exist for all transactions that occur. In other words, the spending on gas, which is a barrier to blockchain transactions, does not arise from Jessia chain platform transactions.

GEC is used in mining and compensation provided by the GEISA chain. GEC matches USDT on a 1:1 basis. At this time, the value ratio of GET and GEC must be set for matching GET and GEC operating on the GESIA platform. The reason is to set the issue amount of GEC tokens operated by the GESIA chain.

## 4.2 Dynamic NFTs (Dynamic NFTs)

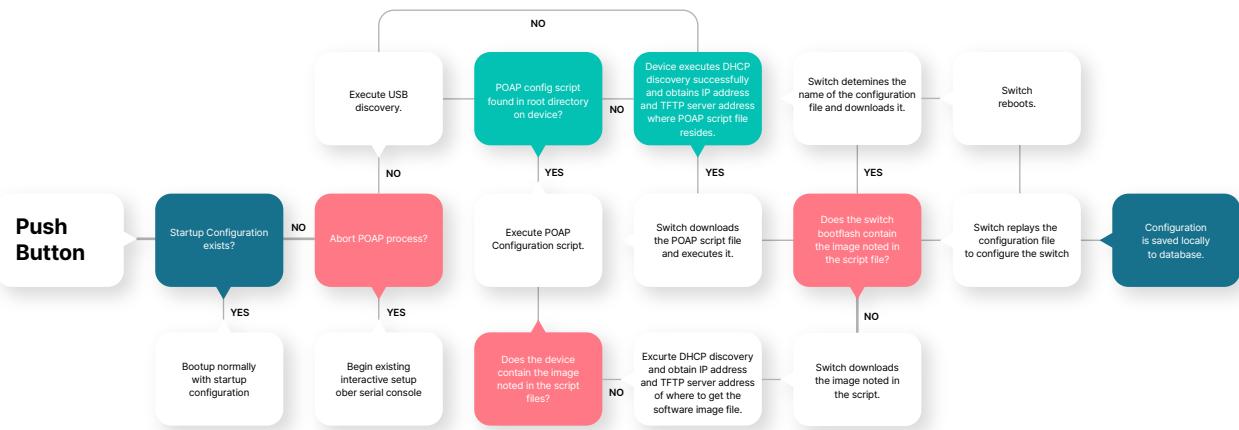


Dynamic NFTs can use both on and off chains, which can be changed through smart contracts. When the NFT requests a change, the smart contract checks the on-off chain data and asks the user to approve the changed information.

1. Request smart contract for NFT
2. Receive smart contract requests
3. Invoke the on-chain data of the smart contract and check the results
4. Use Oracle to invoke off-chain data and view results
5. Check off-chain and on-chain data. You will then receive media 1 and 2 requests for smart contracts.

You can see that NFT is a smart contract that changes, updates, and expands over a period of time. The smart contract determines whether the NFT should be changed and, if so, changes the metadata of the dynamic NFT based on the data in the on-off chain.

## Dynamic NFT Process

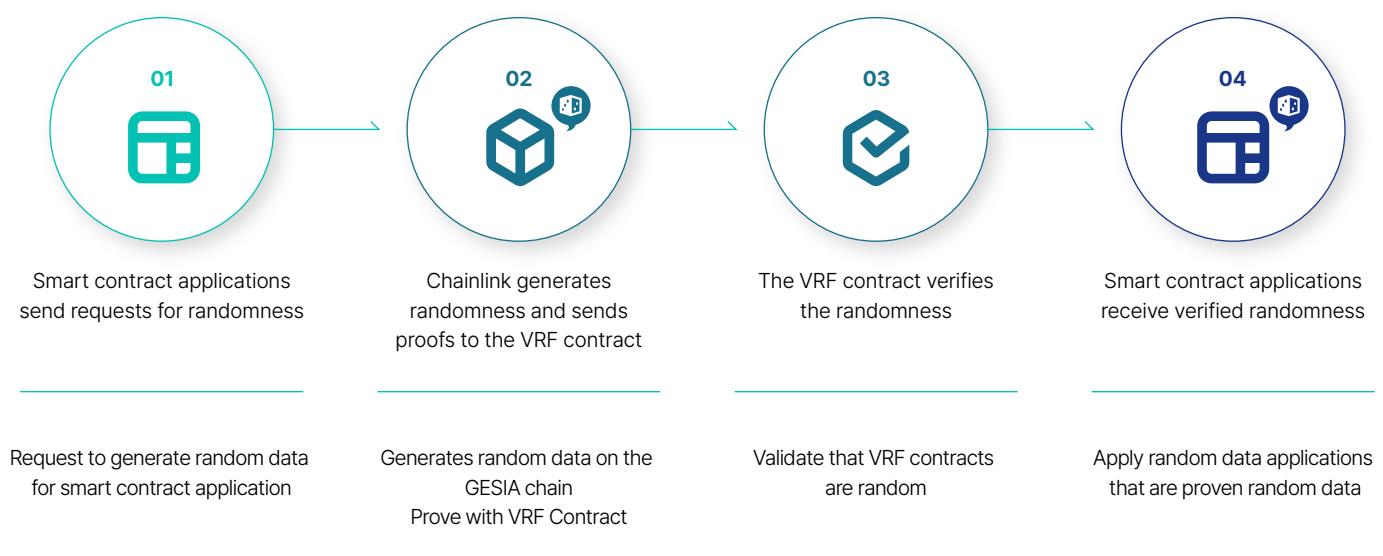


Oracle will add real-time data to Web2 Web sites and off-chain data sources in reality. Dynamic NFTs update continuously changing data with existing static NFTs and Oracle solutions.

In addition, multi-dimensional NFT is possible to use various random functions depending on the VRF (Verifi Table).

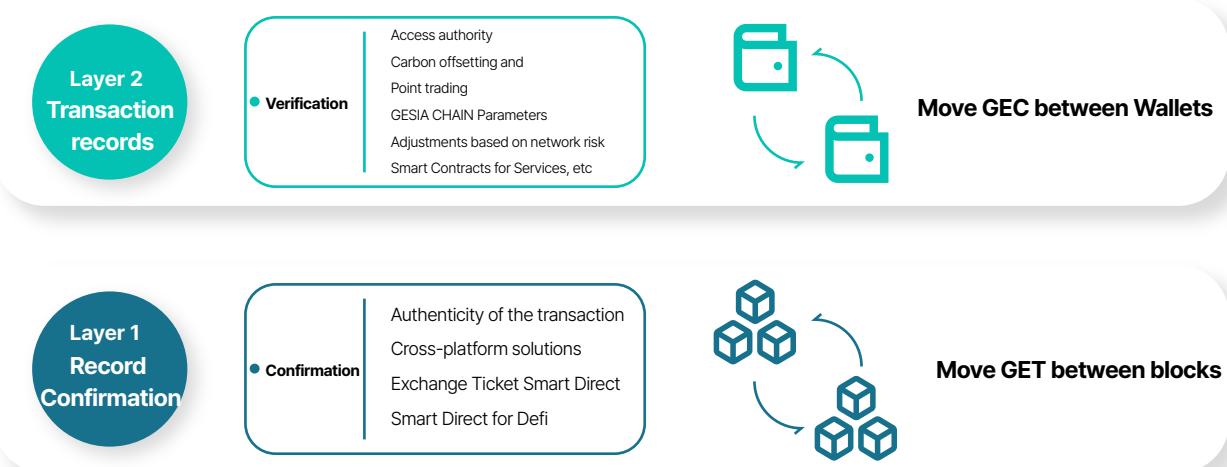
## Dynamic NFTs = NFTs + Oracles

It proves randomness and uniqueness through VRF. NFT receives NFT through reforestation, NFT can be issued by applying data that evolved with the growth of forests, and changes that occur in real life through Oracle network can be applied to blockchain in real time



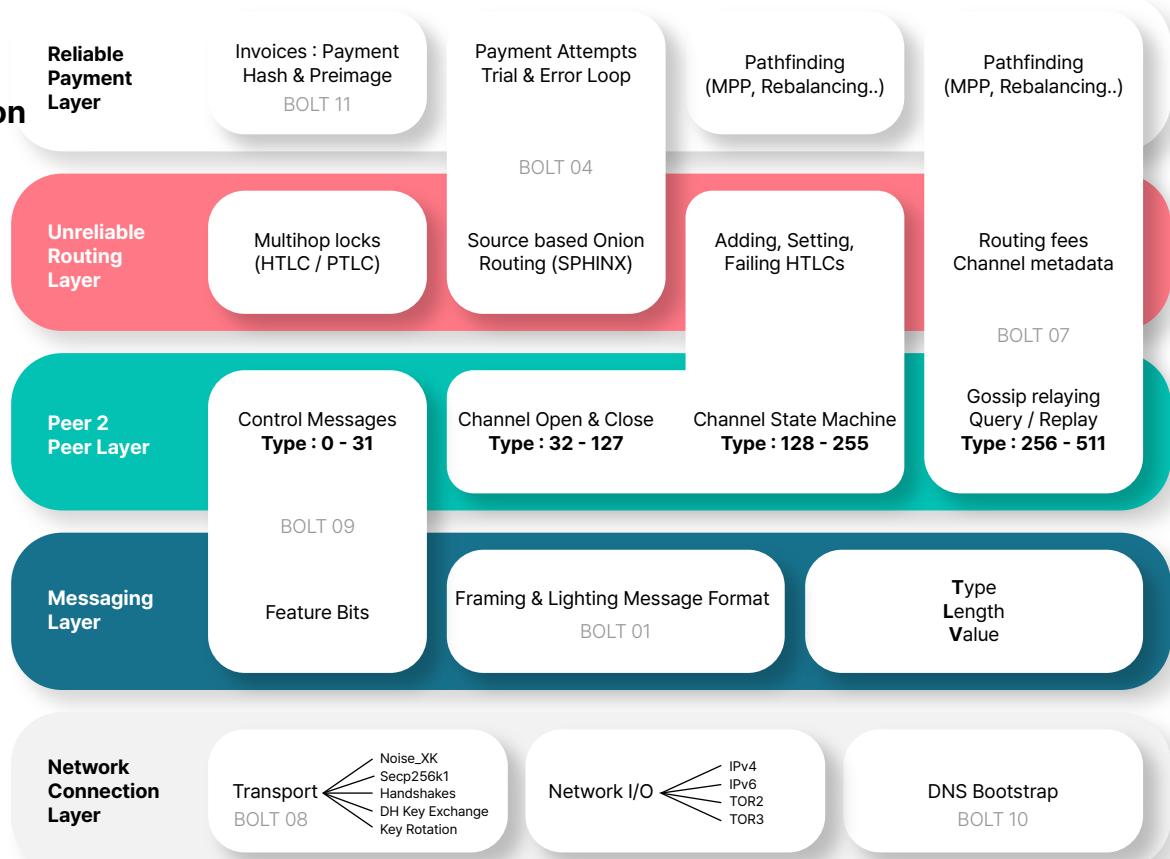
## 4.3 Lightning Protocol

A lightning protocol is a 'Layer 2' payment protocol layered on top of a blockchain-based cryptocurrency. At this time, the Proof of Work consensus algorithm, which consumes excessive energy, is changed to a Proof of Authority-based consensus algorithm so that the network consumes much less energy and transaction fee than a leading public network. Validators participating in the proof of authority are randomly selected from among those participating in the oracle service of the GESIA Chain. The selection process is repeated at regular intervals to solve the centralization dilemma of the proof of authority.



The GESIA chain will be configured to be compatible with the parent public network. Virtualized to ERC-20 on public networks The Green Earth community token (GET) is issued to allow more participants to participate in the ecosystem.

### Lightning Protocols Configuration Examples



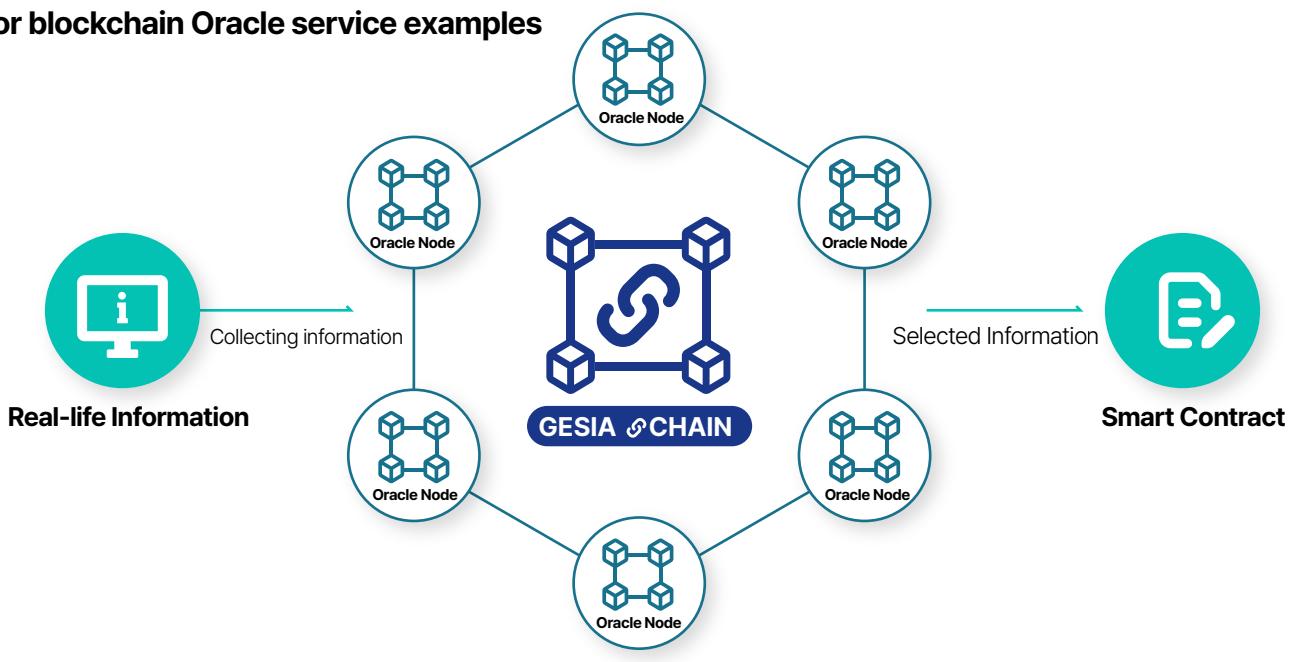
## 4.4 Hybrid Smart Contracts and Oracle Services

To enable exchange between GET issued on the upper public network and the GESIA chain's native GEC, a Hash Time Lock (HTLC) function, a type of smart contract, is used. A hash time lock is a combination of a time lock that delays the execution of a contract for a certain amount of time and a hash lock that executes/ ends a contract only when a specific hash value (end of another transaction) is presented. HTLC overcomes the disadvantage of not seeing what is on different blockchains and enables more reliable exchanges because it can have the same effect as being connected to each other's protocol without seeing each other. This is also called atomic swap, a virtual asset exchange technology between blockchains.

Various smart contracts are also utilized within the GESIA Chain, and conditions for smart contracts can be established based on various external information in real life. A service that provides such external information in real life to a smart contract is called a blockchain oracle service: A smart contract that combines on-chain code and off-chain information is called a hybrid smart contract.

The GESIA chain delivers a variety of information to participants through the blockchain Oracle service and provides them with the ability to make a variety of decisions

### I For blockchain Oracle service examples



## 4.5 Gesia Mainnet 0.8 (2022.12)

### I Development status

- Number of participants: Developers from 4 countries participated in a total of 30m/m
- As of the end of December 2022, Gesia Mainnet version 0.8 has been developed
- Scheduled to open Gesia testnet in March 2023
- Related patent application scheduled (January 2023)

### I Problems with Existing POA Chains

- Only a small number of initial nodes participate

Because the POA chain is a way to achieve proof and consensus through reliable or qualified verifiers/nodes. Although it uses blockchain, it has the disadvantage of a centralized consensus algorithm.

- Block generation in the form of a certain amount of time

Even if there is no data that is not a block method that is connected according to the generation of data and consensus, it is generated according to certain rules.

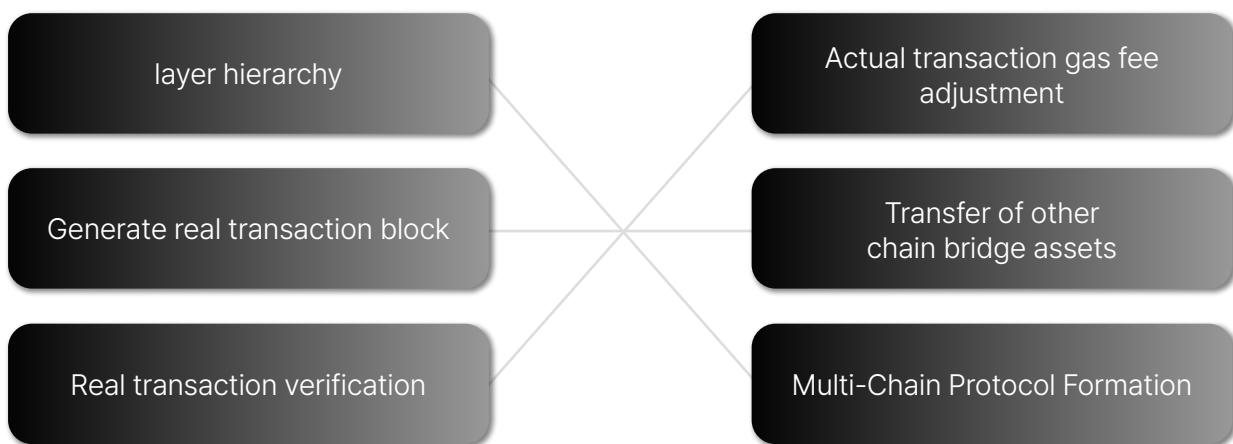
Blocks create a cost burden for chain operation that adopts the POA algorithm.

- Verification in the form of a single chain

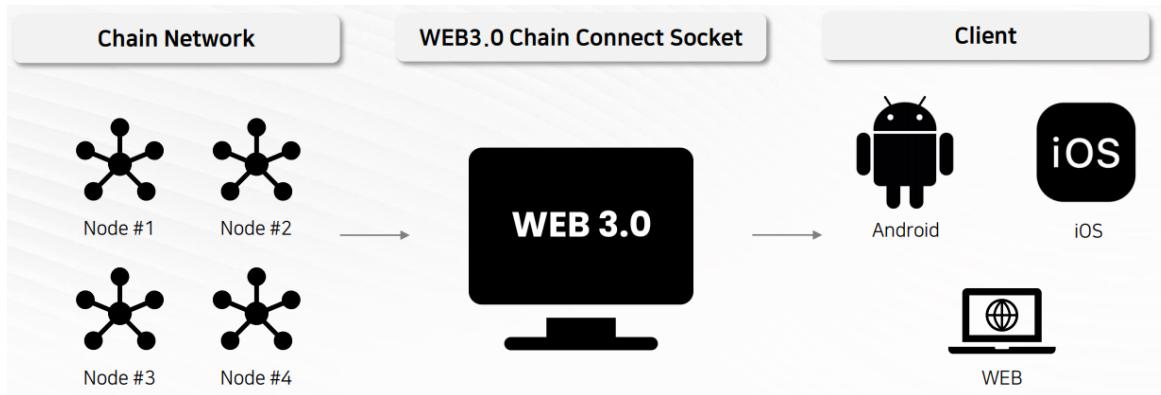
Verification through limited validators/nodes in the cross-chain era where chains are connected

Clarify the limits of scalability of projects, platforms and chains.

### I Features of Gesia Chain (0.8)



## | Gesia Chain (0.8) Service Diagram



## | Main features of Gesia Chain (0.8) service

- Gas (network fee)/non-gas (no fee) transaction separation processing function
- Smart contract-based multi-chain bridge pool asset transfer function

# 05.

# Token Economy

<b>5.1 Distribution of GET</b>	p.29
<b>5.2 Reward Program</b>	p.30
5.2.1 The continuous reward for the entire ecosystem	p.31
5.2.2 Rewards for participants in the verification process	p.31
5.2.3 Rewards for proposals votes	p.31

# 05. Token Economy

## 5.1 Distribution of GET

### Initial Liquidity of Ecosystem

A total of 700 million of the total of 5 billion tokens to be issued, or of the 3.5 billion potentially circulating tokens excluding 1.5 billion reserved tokens, will be initially supplied to the ecosystem directly. Seven hundred million tokens are 550 million owned by early investors and 150 million directly from the liquidity supply pool. After that, the remainder of the liquidity supply pool, 1.35 billion, will be gradually proposed to be issued in conjunction with the ecosystem expansion rate and significant business changes, and the final supply will be decided through a vote by GEC owners.

### Allocations for Founders/Teams/Advisors

This is the amount paid to the founding members, development team, and advisors who have contributed to the GESIA project. The allocated tokens will have a lock-up period of 6 months, and then the tokens will gradually be released for ten months at a rate of 10% per month.

### Partnership

For the furtherance of the GESIA project, the 'Green Earth Community Foundation' will be established to solicit professors, researchers, government liaisons, influencers, etc. Through the foundation, GESIA plans to research policy development for environmental movements and the certification system of carbon offset credits. One hundred fifty million tokens will be allocated to fund its establishment, and the amount will also be locked-up for six months. Locked-up tokens will be gradually released for ten months at a rate of 10% per month afterward.

### Marketing

This is the amount allocated to external entities such as legal, accounting, tax, and management consulting that provided services for the GESIA project.

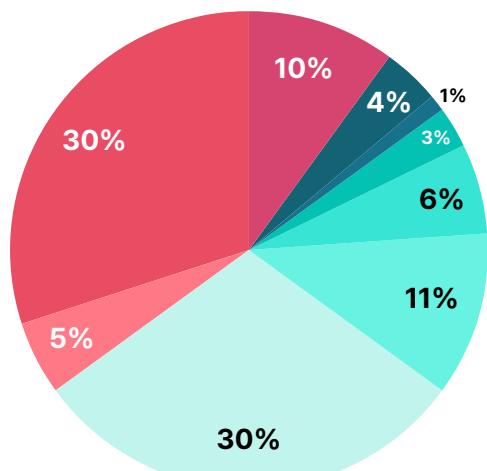
### Early investors

It is the amount allocated to investors who have invested funds for the initial development of the GESIA project. Investors' tokens will also serve as initial liquidity of the GESIA ecosystem so that they may freely liquidate their positions at their will.

### Reward Tokens

Two hundred fifty million will be allocated to promote and accelerate the participation of nodes that provide initial oracle services to expand the GESIA ecosystem.

Item		Distribution Ratio	Issued quantity
Founder & Team	Founder	10%	500,000,000
	Development Team	4%	200,000,000
	Advisor	1%	50,000,000
Partnership	GEC Foundation	3%	150,000,000
Marketing Expenses		6%	300,000,000
Ecosystem Supply Quantity	Early Investor	11%	550,000,000
	Liquidity Supply	30%	1,500,000,000
Reward	5%	250,000,000	
	Reserved for Swap	30%	1,500,000,000
Total		100%	5,000,000,000



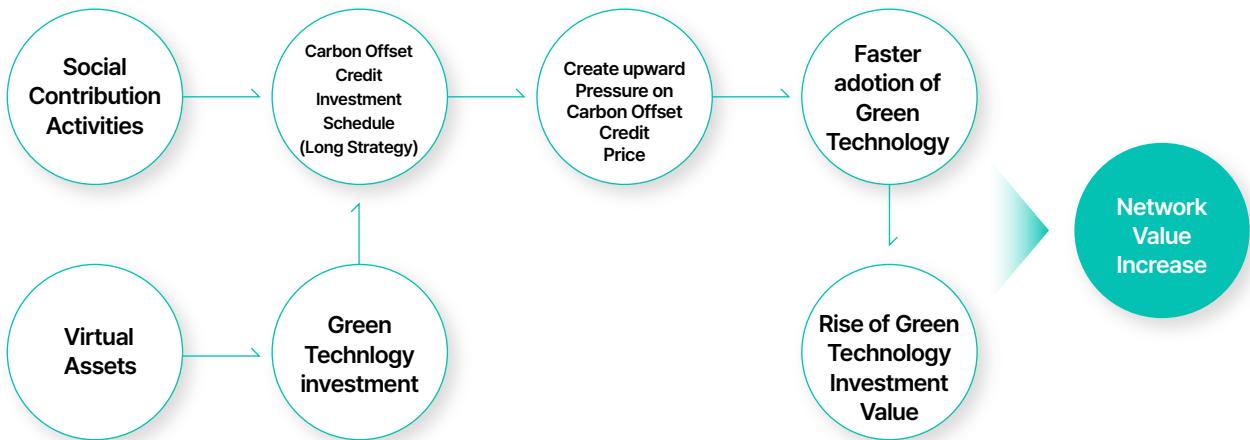
### Green Earth community Token

Development team : 4%	Marketing : 6%	Reward : 5%
Advisor : 1%	Initial investors : 11%	Reserved for Swap : 30%
GEC Foundation : 3%	Liquidity supply : 30%	Founder : 10%

## 5.2 Reward Program

The value of ERC-20-based GET issued is linked to expanding the network value of the entire ecosystem. To foster the growth of this ecosystem's value, GESIA Chain rewards those who have contributed to the ecosystem with various smart contract usage fees and transaction fees. Reward programs will be carefully designed to incentivize more community members to participate.

### Token Economy



As mentioned in the service of the GESIA platform, an intermediary service that allows participants to participate in the carbon offset market actively is suggested. It aims to provide decentralized financial services so green technology companies can commercialize their technologies faster. Like the long-term-oriented synthetic investment strategy, as the GESIA platform continuously procures carbon offset credits to pressurize the upward movement of the price of carbon offset credits, the cost burden of companies to purchase carbon offset credits will be higher.

The upward movement of the price of carbon offset credit will, in turn, make the cost of companies purchasing carbon offset credits higher than the cost of investing in green technology so that there will be more incentive to implement green technologies. Thus, the GESIA member's investment in green technology companies will yield appropriate returns.

### 5.2.1 The continuous reward for the entire ecosystem

The distinctive feature of the GESIA platform is that GETs in circulation are staked and locked in smart contracts to use various services built on the GESIA Chain. GESIA members can use social contribution services and social impact investment services using GEC and will be rewarded with GEC for their contribution to the ecosystem. In other words, even if the ecosystem expands and the number of participants increases, GET's total issuance is fixed. Therefore, as more GEC is used in the ecosystem, the total volume of GET in circulation will be reduced so that the benefits of ecosystem expansion will be returned to GET holders.

Even when GET reserved for swap transactions is released into the circulating volume, it is to purchase carbon offset credits or invest in green technology, which raises the value of the entire ecosystem. In other words, an increase in circulation is proportional to an increase in the value of the entire ecosystem network.

### 5.2.2 Rewards for participants in the verification process

GESIA Chain adopts the Proof of Authority of the validators as its consensus algorithm, while addressing the centralization criticism of the PoA consensus algorithm by building a systemic and autonomous verifier selection process. Any expert participating in the oracle service of the GESIA chain can become a preliminary candidate for validators (For example, 1000 investment advisors).

Among the preliminary candidates for validators, experts who maintain a certain amount of activity in the ecosystem are randomly selected every 24 hours as validator candidates (For example, 100 experts).

Afterward, a final validator and verifiers are randomly selected from among the validator candidates. When a block is added to the blockchain through final verification and confirmation, a fee is collected within the GESIA chain as a reward. Any residual GEC, which is not subject to settlement, will be paid to the final validator.

### 5.2.3 Rewards for proposals and votes

The GESIA platform is open to proposals that can contribute to the expansion of ecosystems, and any ecosystem participant can propose. When a proposal considered necessary to expand the ecosystem is proposed, it will be notified to those participating in the GESIA platform. Holders of GEC can cast votes per the number of tokens they own. At this time, GET owners who wish to participate in the voting can participate by exchanging GET for GEC. At this time, voting rights can be delegated to others, and those who participate in voting will receive a reward. All details of the voting process are kept private until the voting results are announced. The result determines whether the proposal is approved or not. The proposer will receive a separate reward if the proposal is approved.

**Collective Intelligence for Greener Tommorow**

# 06. ROAD MAP

## 06.ROAD MAP

The GESIA platform allows participants to access their services through their wallets. We want to support the open API bank service composed of the suit of Restful APIs so that various companies can more easily integrate the services we provide into their own services.

Year	On-Chain	Off-Chain	Business
<b>2022 4Q</b>	Carbon Offset Credits Architecture		Establish GEC Foundation
<b>2023 1Q</b>	Wrapped Carbon Offset Credits	Provide mileage and Carbon Offset Credit exchange service to at least one travel company	Carbon Offset Credits Trade POC
<b>2023 2Q</b>	Lightning Chain and Swap/NFT Services	Integrated Web service	NFT Green Certificate POC
<b>2023 3Q</b>	Investment DAO Platform	Link external investment information/evaluation information service	Investment Brokerage POC
<b>2023 4Q</b>	Blockchain Oracle	Recruit External Expert	
<b>2024 1Q</b>	Carbon Offset Tokenization	Collect Enterprise-grade API Bank	Information Service POC
<b>2024 2Q</b>		Verification of the system integrity	
<b>2024 4Q</b>			Main Service

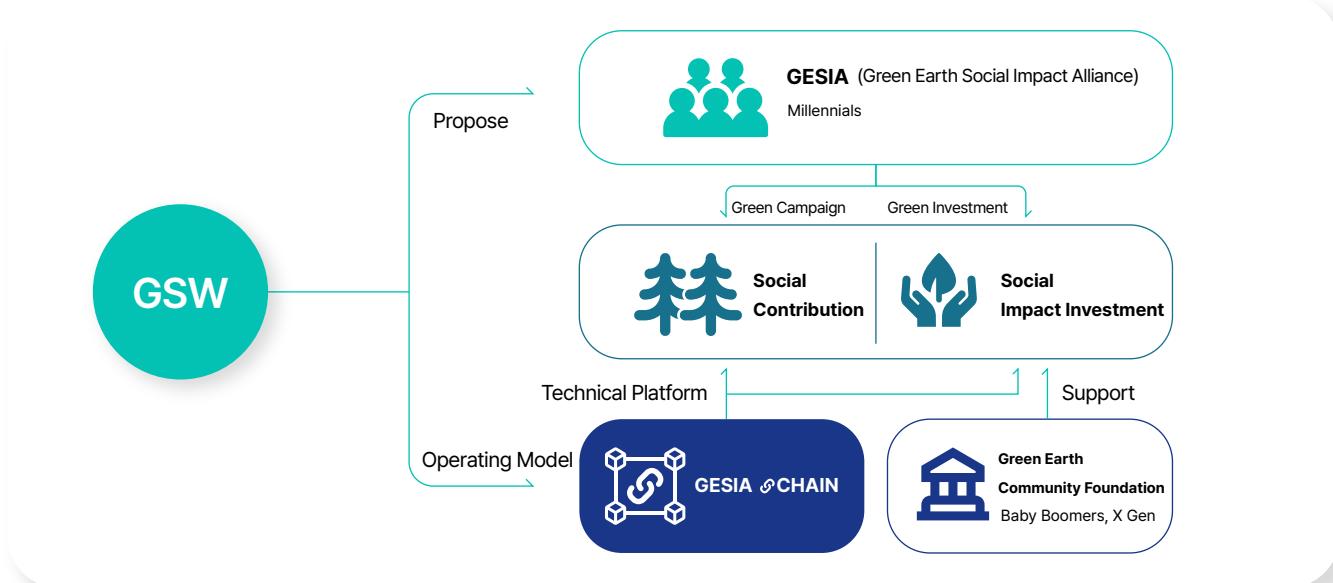
**Collective Intelligence for Greener Tommorow**

# 07. TEAM

## 07. TEAM

The company that will be responsible for the initial development of the GESIA platform and business is Green Social Wave Company Limited(GSW). GSW was first conceptualized by Ellis Ahn, a fashion model, influencer, and millennial herself, with renowned and respected professors who have advised her on the current status of environmental movements of companies and blockchain experts who also share the vision of Ellis. Soon after, many seasoned people in various sectors joined GSW to improve society.

Separately, the Green Earth Community Foundation, which consists of opinion leaders from academia, politics, related organizations, business, etc., will be established for research and policy development necessary for the growth of this project



### I GEC



- C) Professor, College of Business Administration, Seoul National University(SNU)
- F) Associate Dean of Academic Affairs, College of Business Administration, SNU
- F) Associate Dean, Graduate School of Business, SNU
- F) Director, Institute of Labor Relations, SNU
- F) President of Korea Academy of Business Ethics
- F) Vice President, Korea Academy of Management
- F) Managing Director, Korean Academic Society of Business Administration.



- C) DI Co., Ltd. CFO, Executive Vice President of Management Support
- F) Samsung Group, BTC, etc. foreign banks, Managed by SK Securities, Marketinh Offer, Former FX Trader, Head of International Finance Team
- F) Seoul National University Graduate School of Business Administration
- Graduated from Seoul National University, Department of Business Administration

### I GSW (Green Social Wave)



- C) Columbia University, USA
- C) Fashion model
- C) Among social activities related to clothing and the environment
- F) Pop Artist (Exhibition held in Saatchi and Lotte)



- C) Green Social Wave Co-CEO
- C) CEO of Cyworld Jet
- C) CEO of Limitless Investment
- C) Chief Representative of Hancom Town(Metaverse)



- C) Gesia Platform CVO
- C) Green Social Wave Co-CEO
- C) On the Border Non-resident Director
- F) CEO of Taemujin Investment
- F) CEO of HS Startup Investment
- F) CEO of Il Mare



- C) Vice-President, Co-Founder of ITISEN Group
- F) CEO of Open Communication,
- F) CEO of M31 Andromeda,
- F) CEO of The TIU

## I Gesia Platform



- C) CEO of Gesiaplatform
- C) CEO of Spectrum Company
- F) Vice President of JOH Co., Ltd.
- F) Director of Sumi Andus
- F) Director of Il Mare Co., Ltd.
- F) Gana Art Center
- Bachelor of Oriental Painting, Ewha Womans University



- C) Gesiaplatform Senior Advisor
- C) CEO of Blockchain-based travel wallet "Waffle"
- F) Chief architect of the CBDC platform at the Central Bank of The Bahamas



- C) Gesiaplatform Research Director
- C) CEO of Hivve Lab
- F) Worked for transportation companies such as Korea Expressway Corporation Hi-Pass, Seoul T-money, etc.
- F) Developed Korea's first virtual asset payment system 'PayCrypto'
- F) Chairman of Blockchain Subcommittee of Korea Technology Society Foundation
- F) Co-founder/Internal Auditor Woowa Brothers (Baedal Minjok)



- C) Gesiaplatform CFO
- C) Nautic Capital Korea Partner
- F) Alchemist Capital Partners Korea/L&S Venture Capital Korea Managing Director
- F) Lighthouse Combined Investment Korea Partner / Head of Investments
- F) AnaPass, Inc. Korea Advisor, Financing & Business Development
- Yale MBA graduate



- C) Head of Gesiaplatform Development
- F) Development of vehicle entertainment system
- F) Mobile (GSM) application development
- Hankuk University of Foreign Studies Computer Engineering Major



- C) Gesiaplatform Outside Director
- C) IITP (Information and Communications Planning and Evaluation Institute) Evaluator
- C) ISO22301/27001 International Standard BCP/ Assistant Information Protection Certification Examiner
- C) KBIPA (Korea Blockchain Industry Promotion Agency) Registered Director
- C) Global fashion brand CDO/CISO



- C) Gesiaplatform Advisor
- C) Sogang University Graduate School of Information and Communication Distinguished Professor
- C) Director of Korea Blockchain Society
- C) NIDA Blockchain Technology Advisor
- C) Chief Consultant at Law Firm D'Light

# 08.

## DISCLAIMER

# 08.DISCLAIMER

## | Legal Statement

- (a) This white paper has been prepared for the purpose of providing information on the current general status of the Green Earth Social Impact Alliance platform (hereinafter referred to as the 'Platform'). Project information may change after the date of creation.
- (b) Tokens issued by the Platform are applicable to payment tokens and utility tokens but not applicable to asset tokens or financial investment instruments under Capital Markets Act. Therefore, it is considered that Tokens issued by the Platform are not classified as security tokens under Korean law.
- (c) Virtual assets or tokens issued by the Platform are not issued as securities, bonds, or collective investment products stipulated in domestic and foreign securities laws. Therefore, this white paper does not correspond to the prospectus for financial investment products such as securities stipulated in each country. In addition, virtual assets or tokens issued by the Platform do not guarantee participation in the revenue generated in relation to the Platform.
- (d) This White Paper has not been reviewed or approved by supervisory authorities in domestic and foreign countries.

## | Precautions for the contents of the white paper

- (a) The content of this white paper contains forward-looking information about the future of the project, and forward-looking information includes various potential risk factors and uncertainties.
- (b) All unpredictable factors such as fluctuations in the global market and economic conditions, the emergence of competitive platforms, fluctuations in token prices, system errors and hacking, and loss of encryption keys are included.
- (c) The contents of this white paper do not include full contents of the Platform, virtual assets or tokens issued by the Platform, and audit opinions on laws, accounting, and taxation for practitioners.

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