GreenChain Network

White paper

Foreword

In the face of increasingly severe global ecological issues, the excessive consumption of traditional energy has led to a sharp increase in carbon emissions, causing significant impacts on the climate. To address this crisis, developing green clean energy has become a global consensus. According to data from the International Energy Agency (IEA), the share of green clean energy in the global energy mix has gradually increased in recent years. However, during its development, it still faces numerous challenges, such as unstable energy supply, lagging energy storage technology, high market transaction costs, and poor information transparency. These issues constrain the further development of the green clean energy industry.

At the same time, blockchain technology, with its decentralized, tamper-proof, and traceable characteristics, has achieved significant application results in various fields. Integrating blockchain technology into the green clean energy sector holds promise for building a more equitable, transparent, and efficient energy ecosystem, enabling intelligent and automated management of energy production, trading, and consumption.

GreenChain Network has emerged to integrate blockchain technology with green clean energy, aiming to create a decentralized green clean energy ecosystem. This initiative accelerates the global promotion and application of green clean energy, driving green finance and sustainable development. GreenChain Network not only builds a secure and efficient trading platform for green clean energy projects but also leverages smart contracts and token economy models to enhance transparency, efficiency, and fairness in energy transactions, promoting the healthy development of the green clean energy industry.

The core value of GeenChain Network lies in addressing long-standing pain points in the energy sector, enhancing the operational efficiency and transparency of global energy markets, and contributing to environmental protection and sustainable development. In the future, we will continue to innovate, expanding the application scenarios of blockchain technology in the green clean energy field, optimizing GreenChain Network functions, and providing better services for users, investors, partners, and global green clean energy projects. This will help achieve global carbon neutrality goals and promote the development of a green economy.

1 Market analysis and prospects

1.1 Current status of global green and clean energy market

1.1.1 Policy promotion

The global green and clean energy market is in a stage of rapid development, with the scale of development and utilization of solar energy, wind energy, water energy, bio-energy and other clean energy continuously expanding. With the continuous progress of technology and the reduction of production costs, as well as the high attention of the international community to carbon emission reduction, green and clean energy has become the key force of global energy transformation. Governments around the world have introduced policies to support the development of green and clean energy, such as subsidies, tax incentives and mandatory quotas. The signing of the Paris Climate Agreement has further prompted countries to accelerate the pace of green energy transformation and increase investment in clean energy projects.

1.1.2 Technological progress and cost reduction

Significant breakthroughs have been made in clean energy technologies, with increasing conversion efficiency and significantly reduced costs for solar photovoltaic and wind power generation. In some regions, clean energy has gained cost advantages over traditional fossil fuels, such as solar power generation in areas with abundant light, which is now cheaper than thermal power.

1.1.3 Accelerated capital flows

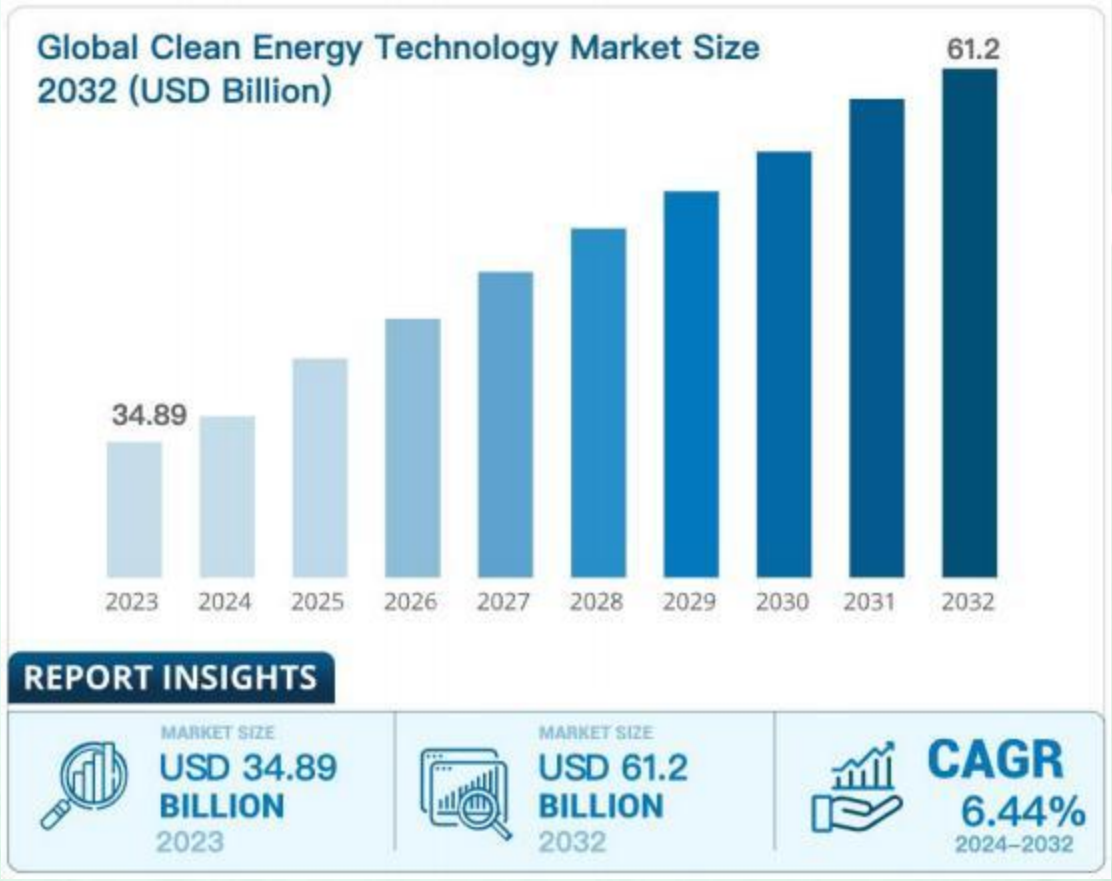
The green clean energy sector has attracted a lot of investment, and international investment institutions and venture capital are actively laying out in this field. At the same time, the rise of ESG investment concept has further promoted the development of green financial market and provided sufficient financial support for clean energy projects.

1.1.4 Market size and potential

The International Energy Agency (IEA) released its 2024 Energy Technology Outlook report, highlighting that since 2015, the global

market value of clean energy technologies has nearly quadrupled, reaching over $700 billion by 2023, which is about half the value of all natural gas produced globally that year. Under the established policy scenarios, these clean energy technologies market will grow nearly twofold to over $2 trillion by 2035, a figure close to the average annual value of the global crude oil market in recent years.

In manufacturing and trade, clean energy technologies also show great potential. According to Business Research Insights data, the global clean energy technology market was $34.89 billion in 2023 and is expected to grow from $37.14 billion in 2024 to $61.2 billion in 2032, with a projected annual growth rate of 6.44% during the forecast period.



1.2 Opportunities for blockchain and green clean energy

Blockchain technology brings innovative opportunities for the development of green and clean energy, which can effectively solve many problems facing the current market and promote the healthy development of energy trading and markets.

1.2.1 Decentralized energy trading

Traditional energy trading relies on intermediaries, which is cumbersome, costly and inefficient. The decentralized trading platform built by blockchain technology allows energy producers and consumers to trade directly with each other, removing intermediaries, reducing transaction costs, and improving transaction transparency and efficiency.

1.2.2 Smart contracts and automation

Smart contracts can automatically execute energy trading agreements without human intervention, reducing human error and trading risks. Contracts can automatically complete energy delivery and payment according to preset conditions, greatly improving trading efficiency.

1.2.3 Energy tracking and verification

The traceability of blockchain ensures the clarity and transparency of energy sources, so that consumers and enterprises can accurately check whether the energy they buy comes from green and clean energy. By recording the whole process of energy production, transportation and consumption, it realizes the accurate tracking and verification of clean energy.

1.2.4 Green incentive mechanism

Integrate blockchain with the token economy to establish a green incentive system. Users who use clean energy, invest in green projects, or participate in environmental actions can receive token rewards. These tokens can be used within the platform to pay for energy bills, exchange for green products or services, thereby encouraging more users to participate in the construction of a green energy ecosystem.

1.3 Industry Challenges and Solutions

Although the green clean energy market and blockchain technology have broad development prospects, there are still many challenges in practical application. G reenChain Network helps the industry break through development bottlenecks with innovative solutions.

1.3.1 Industry Challenges

- Energy storage and stability problems: Green clean energy has the characteristics of intermittence and volatility, which brings difficulties to energy storage and stable supply. At present, the cost of energy storage technology is high and the efficiency is low, which limits the large-scale effective utilization of clean energy.

- Lack of market liquidity: Many green and clean energy projects are faced with the problem of capital shortage and low market activity, which makes it difficult to obtain sufficient investment and financing support. Information asymmetry in the traditional energy market leads to lack of market liquidity, which affects the development of clean energy projects.

- Lack of carbon emission monitoring and reporting: Although the

world is committed to achieving the goal of carbon neutrality, the existing carbon emission data monitoring and reporting system is not perfect, lacking unified standards and effective traceability mechanism, which makes enterprises lack clear guidance in the process of green development.

- Policy and regulatory uncertainty: Policies and regulations in the green and clean energy sector are not yet perfect, and frequent changes and uncertainties in policies pose risks to investors and project developers, especially in cross-border energy trading and carbon trading markets, where regulatory differences increase the complexity of market operations.

1.3.2 Solution

- Blockchain transparency and data management: Using the tamper-proof nature of blockchain, energy production, consumption and carbon emission data are recorded to provide credible energy certificates and carbon credits to ensure transparency and traceability of data and provide accurate data support for enterprises and regulators.

- Decentralized market and liquidity improvement: G reenChain Networks decentralized trading platform breaks down market barriers, gathers global energy supply and demand information, improves market liquidity, promotes capital flow to green clean energy projects, and promotes industry development.

- Green incentives and environmental mining: With the help of token economy mechanism, rich incentives are set up to encourage users to participate in the investment, production and consumption of green clean energy projects. Through environmental mining, users can get economic returns while participating in environmental protection actions, attracting more market players to participate and

expanding the market scale.

- Smart contract reduces transaction costs: using smart contract to automate the execution of energy transaction process, reduce intermediary fees and administrative costs, improve transaction efficiency, enhance market competitiveness, and create a more favorable market environment for green clean energy transactions.

1.4 Potential user groups and market demand

With the increasing global environmental awareness and the deep penetration of sustainable development concept, the demand for green clean energy continues to grow, and G reenChain Network has a wide range of potential users.

1.4.1 Main user groups

- Green clean energy producers and suppliers: Solar, wind and other clean energy producers and suppliers are the core users of the platform. Through G reenChain Networks decentralized trading platform, they can more easily sell energy, reduce intermediate costs, improve market exposure, and expand business channels.

- Enterprise users: Enterprises in various industries, especially those with large energy consumption, are facing increasingly strict pressure to reduce emissions. With the help of the platform, enterprises can realize green energy procurement, optimize energy structure, reduce carbon emissions, and at the same time use the incentive mechanism of the platform to reduce operating costs, enhance corporate social responsibility and market competitiveness.

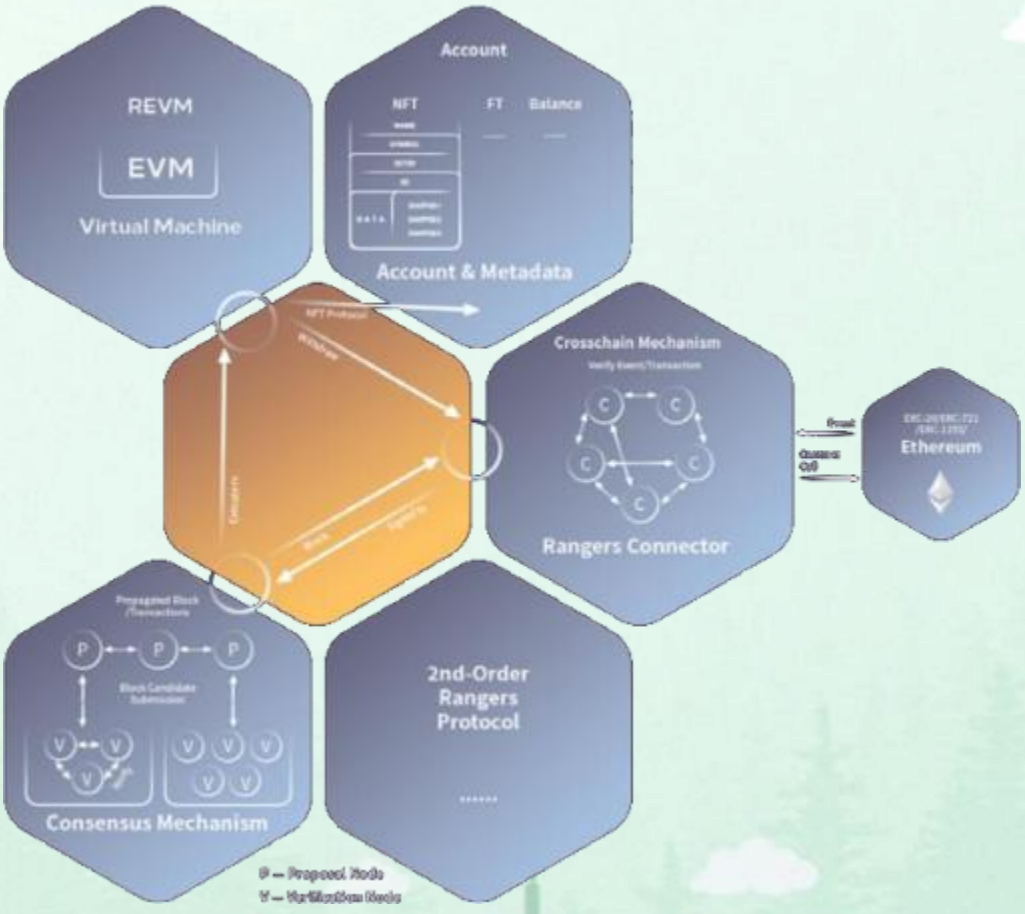
- Investors and Funds: The booming green financial market has attracted many green funds and private investors. G reenChain Network provides them with a transparent and efficient investment channel to support the financing of various green and clean energy projects, help investors obtain stable investment returns, and realize the green allocation of assets.

- Ordinary consumers and individual users: The improvement of consumers environmental awareness makes their demand for green clean energy increasing. Individual users can participate in environmental mining through the platform, and get token rewards in the process of using clean energy, so as to achieve a win-win situation of green consumption and economic benefits.

1.4.2 Market demand

- Global sustainable energy demand growth: The urgent need to address climate change and reduce carbon emissions is driving the rapid development of green clean energy markets. With the rise of electric vehicles, smart homes and other fields, the demand for clean energy will continue to climb.

- The demand for carbon emission and energy consumption monitoring: Strict regulations on carbon emissions and the need for refined energy management from enterprises and society have led to a sharp increase in the demand for carbon emission monitoring and energy consumption management. G reenChain Networks precise data and solutions can meet the markets needs for carbon emission and energy consumption monitoring.



2 Project overview

2.1 On GreenChain Network

GreenChain Network is an innovative platform based on blockchain technology, dedicated to fostering the prosperity of the global green clean energy market. The platform employs a decentralized architecture and smart contract technology to streamline and optimize energy trading processes, reduce intermediary costs, and enhance transparency and operational efficiency in the energy market. GreenChain Network covers various forms of green clean energy, including solar, wind, hydro, and biomass, creating a secure, reliable, and convenient environment for global users to trade green clean energy.

GreenChain Network supports direct transactions between energy suppliers and consumers, leveraging blockchain technology to achieve full traceability throughout the energy supply chain, ensuring the reliability and traceability of energy sources. At the same time, through innovative mechanisms such as environmental mining, it encourages individuals and businesses to actively participate in the production and consumption of green clean energy, promoting its widespread adoption.

2.2 GreenChain Networks vision and mission

Vision 2.2.1

To become the worlds leading decentralized green clean energy platform, using innovative blockchain technology to provide transparent, efficient and secure solutions for the global renewable energy market, helping to achieve the global sustainable development goals and promote the world towards a carbon neutral future.

2.2.2 Mission

Through a decentralized energy trading platform, individuals and organizations are empowered to actively participate in environmental sustainability actions, support financing and development of green clean energy projects, and use blockchain technology to achieve functions such as energy traceability and carbon emission monitoring, so as to promote transparency and sustainable development of the global energy industry.

2.3 Core objectives and strategies of GreenChain Network

2.3.2 Core objectives

- Global Green Clean Energy Market Leader: committed to becoming the global leader in green clean energy trading platforms, promoting the widespread adoption of green clean energy transactions, and supporting efficient trading between global energy suppliers and consumers on the platform.

- Provide decentralized green financial services: Use innovative blockchain financial tools to provide financing and investment support for green clean energy projects, and promote capital flow and project implementation in the field of renewable energy.

- Promoting the realization of global carbon emission reduction targets: By providing carbon credit trading, energy tracking and carbon emission monitoring services, we will help the world reduce carbon emissions, promote the wide application of green and clean energy, and support the world in achieving carbon neutrality targets.

2.3.3 Strategy

- Technological innovation and platform expansion: Continuous investment in blockchain and energy management technology research and development to enhance the security, transparency and efficiency of the platform. Cooperation with global energy suppliers, government agencies and related organizations to expand the influence of the platform and build a global green clean energy trading ecosystem.

- Support for diversified green and clean energy projects: Support a

variety of green and clean energy projects, covering solar energy, wind energy, water energy, bio-energy and other fields, to promote the wide application and coordinated development of various forms of clean energy.

- Incentive mechanism and community construction: Introduce environmental mining and token incentive mechanism to encourage users to actively participate in the platforms green and clean energy trading and investment activities, and build an active and highly participatory green and clean energy community.

- Global cooperation and policy promotion: work closely with governments, international organizations, energy companies and financial institutions to promote the formulation and implementation of green clean energy policies, promote the healthy development of renewable energy markets, and contribute to the global green economic transformation.

2.4 The value proposition of GreenChain Network

GreenChain Network Based on blockchain technology, we will build a green and clean energy trading platform, solve the pain points of traditional energy market through innovative technologies and incentive mechanisms, and create unique value.

- Decentralization and transparency: Decentralization of energy transactions can be realized with the help of blockchain technology, reducing intermediary links, reducing costs and improving transaction transparency. All transaction information can be traced on the blockchain to eliminate information asymmetry and protect the rights and interests of both parties.

- Efficient energy trading: Use smart contract to realize the automation of energy trading, simplify the transaction process, reduce

transaction costs, improve transaction efficiency, and promote the rapid circulation and wide application of green and clean energy.

- Global green and clean energy market: Decentralized platform model breaks geographical and national boundaries, connects global energy suppliers and consumers, builds a global green and clean energy trading market, and optimizes energy resource allocation.

- Carbon emission monitoring and credit trading: The platform provides a precise carbon emission monitoring system and supports carbon credit trading. It helps enterprises and governments achieve the goal of carbon neutrality, and opens up new financing channels for green and clean energy projects.

- Innovation incentive mechanism: Through environmental mining and token rewards and other incentive mechanisms, users are encouraged to actively participate in the investment and consumption of green clean energy projects, stimulate market vitality, and promote the prosperity and development of green clean energy market.

- Support green finance: Build green financial infrastructure, provide diversified financing channels for green and clean energy projects, help projects to obtain sufficient funding support, accelerate project implementation, and promote the development of green energy industry.

3 Technical architecture and implementation

3.1 Technical architecture

GreenChain Networks technical architecture is composed of multiple key components to ensure that the platform is efficient, secure and scalable. It mainly includes the following levels:

- Network layer: The decentralized node network is built using blockchain technology to support global green clean energy trading. Nodes are distributed all over the world to ensure the decentralization, fault tolerance and high availability of the network. Core components include:

- Blockchain nodes: As the foundation of the network, each node ensures the security and immutability of transactions through a consensus mechanism. Nodes can be energy suppliers, consumers or third-party certification bodies.

- Smart contract: realize automated transactions, clarify the trading rules of green and clean energy, energy certification standards and payment methods, etc., to ensure the transparency and compliance of transactions.

- Blockchain layer: Selecting a public chain or consortium chain architecture is the core of the entire technical architecture. The main functions are:
- Transaction records: All energy transactions, carbon credit transactions, energy traceability and other information are encrypted and stored on the blockchain to ensure data security and

transparency.

- Consensus mechanism: DPoS is adopted as a consensus algorithm suitable for green and clean energy trading, which can reduce energy consumption while ensuring efficient confirmation of transactions.

- Data layer: Responsible for storing and processing green clean energy related data, including transaction data, carbon emission data, energy supply chain data, etc.

3.2 The combination of blockchain and green clean energy

The integration of blockchain and green clean energy is the core innovation of GreenChain Network, which effectively solves many problems in the field of green clean energy and promotes the development of the industry.

- The Transparency of the Energy Supply Chain: Traditional energy supply chains lack transparency, making it difficult for consumers to understand the sources and production processes of energy. GreenChain Network uses blockchain technology to assign a digital identity to each unit of green clean energy, enabling full traceability and verification throughout the energy supply chain. Through green energy certification, an unalterable digital certificate is generated, proving the renewable origin of the energy; with the help of traceability functions, the entire process of energy production, storage, transportation, and sales is accurately recorded, allowing consumers and businesses to clearly understand energy information and purchase green clean energy with confidence.

- Decentralized Energy Trading: The decentralized nature of blockchain enables GreenChain Network to build an energy trading market

without intermediaries. Through smart contracts, buyers and sellers can transact directly, reducing transaction costs and improving efficiency. Smart contracts automatically execute payment and delivery processes, ensuring fair and efficient transactions. At the same time, decentralized platforms do not rely on traditional intermediaries, lowering transaction costs and enhancing market competitiveness.

- Carbon Emission Monitoring and Carbon Credit Trading: GreenChain Network leverages blockchain technology to achieve precise monitoring and certification of carbon emission data, driving the development of the carbon trading market. The platform collects and analyzes global energy usage data, calculates carbon emissions, and creates carbon credits, supporting businesses and governments in offsetting and trading carbon emissions. By monitoring carbon emissions in real time, it ensures that companies and individuals meet environmental standards; the carbon credit market provides users with a channel for buying and selling carbon credits, aiding in achieving carbon neutrality goals.

- Incentive Mechanisms and Environmental Mining: The tokenization feature of blockchain has endowed GreenChain Network with innovative environmental incentive mechanisms. Users participating in the production, consumption, and trading of green clean energy can earn token rewards, promoting the widespread application of clean energy. Environmental mining encourages users to produce or consume green clean energy; when users engage in related activities on the platform, they earn platform tokens based on their contributions. Additionally, the platform rewards companies and users committed to environmental protection and sustainable development, driving the sustainable development of the entire ecosystem.

3.3 Smart contracts and decentralized energy trading

In GreenChain Network, smart contracts are the key tools to realize decentralized energy transactions. Their automation features improve the efficiency, transparency and security of energy transactions, and solve many problems in traditional energy markets.

3.3.1 Application of smart contract in energy trading

- Automated payment and settlement: Both parties in energy trading can set the quantity, price, delivery time and other trading terms in the smart contract. When the conditions are met, the smart contract automatically triggers the payment process to ensure the completion of the transaction.

- No intermediary: Traditional energy trading relies on third-party platforms or intermediaries for transaction matching and fund settlement, which is costly. GreenChain Network Decentralized trading can be realized through smart contracts to reduce intermediary links and reduce transaction costs.

- Transparency and tamper-proof: Smart contracts are executed based on blockchain technology, and all transaction records are open, transparent and tamper-proof. Both parties can check the execution of transactions at any time, which enhances the credibility of transactions.

- Real-time monitoring and execution: Smart contracts are connected in real time with green clean energy production systems and grid management systems. When energy production or consumption reaches predetermined conditions, contracts are executed immediately to complete transactions and reduce delays and errors.

3.3.2 Decentralized energy trading market

- Market matching: The platform automatically matches the energy trading demand and supply information provided by users through smart contracts. Users set the expected price and trading volume, and the smart contract finds the most suitable trading party according to the market supply and demand situation.

- Reduce transaction costs: Traditional energy market intermediaries include exchanges, brokers, clearing houses, etc., which are costly. GreenChain Networks decentralized mechanism eliminates these intermediaries and significantly reduces transaction costs.

- Multiple trading methods: The platform supports spot trading, long-term contracts, carbon credit trading and other types of energy trading. The smart contract automatically adjusts the trading execution rules according to the requirements of different trading types.

- Incentive Mechanism for Green Energy: Smart contracts provide incentives to producers and consumers of green clean energy. Energy producers supply energy, and smart contracts calculate token rewards based on the amount supplied and market demand; users who actively participate in energy conservation and green energy consumption can also receive token rewards based on their consumption, encouraging more users to engage in the production and consumption of green energy.

3.4 Security and privacy protection mechanism

GreenChain Network Pay great attention to security and privacy protection, and take multiple measures to ensure the security of user information, transaction data and smart contracts.

- Blockchain Encryption Technology: The encryption feature of blockchain is the foundation of its secure architecture. All transaction data is stored on the blockchain in encrypted form, using both symmetric and asymmetric encryption algorithms to encrypt sensitive data, ensuring data privacy. Each energy transaction generates a unique hash value that is recorded on the blockchain. Any modification will result in a change in the hash value, guaranteeing the authenticity and immutability of the transactions.

- Multi-Identity Verification and Authorization Management: To ensure user identity security, the platform implements a multi-factor authentication (2FA) mechanism. In addition to username and password, users must also verify their identity through methods such as SMS, email, or an authenticator when logging in. Furthermore, different permissions are set based on user roles (such as energy producers, consumers, and platform administrators), ensuring that users can only access data and functions related to their role, thus preventing misuse of permissions.

- Anonymous Transactions and Privacy Protection: The platform supports anonymous transactions to protect user privacy. Although transaction records are publicly displayed on the blockchain, user identity information is hidden through encryption. Furthermore, the platform may employ zero-knowledge proof (ZKP) technology, allowing users to verify the legitimacy and validity of transactions without disclosing specific details, thereby enhancing privacy protection.

- Security Smart Contracts: The platform adopts advanced security audit mechanisms to ensure that smart contracts undergo rigorous code reviews and security tests before going live. All smart contracts are independently audited by third parties, with regular vulnerability

scans and testing to promptly fix any potential security issues. Additionally, a flexible smart contract upgrade mechanism is provided to optimize contract content while ensuring system security.

3.5 Scalability and future development plans

GreenChain Networks technical architecture is scalable and can be upgraded and optimized to adapt to market changes and technological developments.

Blockchain scalability

- Sharding technology: Sharding (Sharding) technology divides the blockchain network into multiple independent sub-chains, each of which independently processes transactions and stores data to improve transaction processing speed and efficiency and cope with the increasing transaction volume and data processing requirements in the future.

- Layer 2 Solution: Support the second layer solution (such as state channel and sidechain) to transfer some transactions from the main chain to the secondary chain, reduce the burden on the main chain, and achieve faster transaction confirmation.

- Cross-Chain Compatibility: As blockchain platforms continue to evolve, GreenChain Network plans to integrate with other public chain platforms through cross-chain technology. This will enable interoperability with other blockchain networks, expand the scope of energy transactions, and enhance liquidity. In the future, cross-chain protocols (such as Polkadot and Cosmos) will be integrated, allowing users to conduct energy transactions and asset transfers across different blockchains.

- Artificial Intelligence and Big Data Applications: The platform plans to integrate artificial intelligence (AI) and big data analytics technologies to optimize energy trading and supply chain management. AI algorithms analyze vast amounts of energy usage data, offering intelligent energy distribution solutions and predicting trends in energy demand. This helps users optimize their energy use in real-time and provides personalized energy usage recommendations; big data analytics technology offers detailed reports and market insights for energy producers, consumers, and policymakers.

- International Expansion and Global Strategy: After the platform matures, it will expand its business globally, promoting the global adoption of green and clean energy. It will collaborate with governments, businesses, and energy suppliers worldwide to facilitate the application and trading of green and clean energy globally. Actively partnering with international organizations, non-governmental organizations, and industry leaders, it aims to jointly advance the standardization and sustainable development of green and clean energy.

4 Token economy model

4.1 GCN distribution plan

GCN (GreenChain Network Token), as the native token of the GreenChain Network ecosystem, serves multiple critical functions. It is a key medium for green energy trading, platform governance, incentive mechanisms, and environmental protection. The total supply of GCN is limited to 200,000,000 tokens, which will be gradually released during the platforms development to ensure the scarcity and long-term value of the tokens.

The distribution details are as follows:

- IDO： 20%
- Technology: 20%
- Operations: 30%
- Foundation: 10%
- Environmental mining: 20%
- Price: $1.15

4.2 GCN usage scenarios and applications

GCN is widely used in the GreenChain Network ecosystem, covering energy trading, platform services, incentive mechanisms and more.

- Energy transaction payment: GCN is the main payment method for green and clean energy transactions on the platform. When users buy energy, they use GCN to pay, and both parties automatically settle transactions through smart contracts, ensuring transparent and efficient transactions, reducing intermediary fees and settlement delays.

- Investment and funding of environmental protection projects: Environmental protection projects and green clean energy construction within the platform can be funded through GCN. Individuals, enterprises and investors can participate in green energy projects through GCN, which can not only contribute to environmental protection, but also obtain investment income.

- Incentive mechanism: The platform uses GCN to incentivize ecosystem participants to promote the production, consumption and trading of green and clean energy. Energy producers and consumers receive GCN rewards for generating and consuming green energy, and nodes and miners who actively participate in the development of the platform can also receive additional incentives.

- Governance and Decision-making: As the governance token of the platform, GCN holders have the right to vote on platform governance. Users can use GCN to participate in platform decisions such as protocol upgrades, ecological fund allocation and platform strategic direction formulation, so as to ensure that the opinions of all ecological participants are taken into account.

- Carbon credit and carbon trading: GCN combines with the carbon credit mechanism, and users who participate in green clean energy production and carbon emission reduction can receive GCN rewards. Through smart contracts, users conduct carbon credit trading on the platform, and GCN acts as a trading medium to help achieve the global carbon neutrality goal.

4.3 Incentive mechanism and ecological participation

The incentive mechanism of GreenChain Network aims to promote all parties to actively participate in platform activities and promote the development of green and clean energy. Through a multi-level reward system, GCN has become the driving force for all parties to participate.

- Green energy production incentives: Provide GCN rewards to green and clean energy producers (such as solar, wind, hydro, etc.) who upload their energy to the platform and complete the sale. Producers will receive a corresponding amount of GCN based on the energy output and transaction amount.

- Green energy consumption incentives: The platform rewards consumers of green and clean energy, encouraging them to reduce fossil fuel consumption. Consumers who actively use green energy get GCN on the platform, which helps reduce carbon emissions and increase demand for green energy.

- Community participation incentive: Encourage users to participate in the development of the platform through community reward mechanism. Users can get GCN rewards by participating in activities such as voting, giving feedback and promoting ecology on the platform. The platform sets up an active user reward pool to enhance the influence of users in the platform.

- Environmental mining incentive: Users can participate in environmental mining activities such as green and clean energy production, energy conservation and emission reduction, and carbon credit trading to receive GCN rewards. Environmental mining not only brings benefits to users, but also is an effective means for the platform to promote the application of green and clean energy.

4.4 Environmental mining mechanism

GreenChain Network The original "environmental mining mechanism" is an innovative initiative to promote the development of green clean energy and environmental protection projects by rewarding participants in actual environmental actions to help the global green transition.

- Principle of environmental mining: Environmental mining rewards users environmental behaviors (such as reducing carbon emissions, supporting green energy projects, participating in carbon trading, etc.). The platform uses smart contracts to record these behaviors and issue GCN according to actual contributions, relying on blockchain technology to ensure the transparency and traceability of environmental contributions.

- Mining for green energy projects: Users can participate in the construction of solar, wind, hydro and other green clean energy projects, providing funds, technology or other support and receiving GCN rewards based on their contributions.
- Carbon reduction mining: The platform provides carbon reduction mining opportunities, users participate in carbon reduction projects, invest in green technologies and products to reduce carbon emissions, each carbon reduction action can be converted into corresponding GCN rewards, promoting the realization of sustainable development goals.

- Continuous optimization and governance: The mining mechanism in the environment is continuously optimized through community consensus and governance mechanism. Users can put forward suggestions, participate in discussions and vote to ensure the fairness and effectiveness of the mining mechanism, attract more users to participate and improve environmental benefits.

4.5 Prediction of circulation and value growth of GCN

The liquidity of GCN is closely related to the development of the platform ecology. Through reasonable design of token issuance, usage scenarios and incentive mechanisms, its demand and value will grow with the expansion of the platform ecology.

- Listing on the exchange: GCN will be listed on major cryptocurrency exchanges, allowing users to buy and sell, enabling liquidity of the currency.

- Platform payment: GCN is widely used in the platform for energy trading, platform service payment, reward mechanism, etc., to improve its circulation in the ecosystem.

- Long-term lock and release: GCN locks and releases according to the issuance plan to balance the market supply and demand.

- Expansion of the green energy market: The growing global demand for clean, green energy will directly drive an increase in GCNs demand for energy trading and environmental project funding.

- Platform user growth: GreenChain Network Ecosystem attracts more green clean energy producers, consumers, investors and environmental activists to participate and expand the circulation of

GCN.

- Governance and Decentralization: As decentralized governance and platform construction advance, GCN plays an increasingly important role in platform governance, further enhancing its value.

- Carbon trading and carbon neutralization policies: The development of the global carbon trading market and the implementation of carbon neutralization policies in various countries have created new market opportunities for GCN, driving its long-term appreciation.

5 Green finance and investment mechanism

GreenChain Network is committed to providing innovative financing channels and financial support for green clean energy projects, integrating blockchain technology with the concept of green finance, providing investors and projects with efficient, safe and transparent financial solutions, and helping achieve global renewable energy development and carbon reduction targets.

5.1 Green bonds and green funds

In the green finance ecosystem of GreenChain Network, green bonds and green funds are important financing tools to promote the financing and development of global green projects.

5.1.1 Green bonds

- Bond issuance: GreenChain Network Support the issuance of various types of green bonds to raise funds for green clean energy projects, and investors buy bonds to support projects and obtain fixed returns.

- Bond trading: Provide a decentralized bond trading market to facilitate bond investors to trade green bonds in the secondary market, improve bond liquidity and market transparency.

- Bond income: Bond income comes from the profits of green projects. The platform ensures transparent distribution of income and pays

returns to investors according to the profits of projects.

5.1.2 Green Fund

- Fund type: Support a variety of green funds, such as wind energy fund, solar energy fund, carbon emission reduction fund, etc., focusing on different sustainable energy project areas.

- Fund management: Through the decentralized governance model, the transparency and efficient management of green funds are guaranteed. Investors choose funds for investment according to their risk preferences.

- Return on investment: The fund returns come from the profits of green projects and sustainable development results, which are transparently distributed through blockchain smart contracts, so that investors can clearly understand the return on investment.

5.2 Financing channels and project investment

GreenChain Network Provide diversified financing channels for green and clean energy projects, and use blockchain technology to ensure efficient and transparent financing and reduce financing costs.

5.2.1 Project financing channels

- Crowdfunding for green projects: Build a crowdfunding platform based on blockchain, where project owners can raise funds from global investors who support green projects that meet the goals of sustainable development through the platform.

- Green debt financing: Provide green debt financing channels for project parties, who can issue green bonds or cooperate with other institutions to obtain debt financing for project construction.

- Venture capital and equity financing: Provide venture capital and equity financing support for innovative green clean energy projects, investors participate in project growth through equity investment, and obtain capital returns.

5.2.2 Financing process and smart contract

- Smart contract mechanism: Use smart contracts to manage the financing process, and ensure the transparent flow and compliance of funds. All the flow records of funds are on the blockchain, so that each fund can be traced.

- Transparent financing platform: A decentralized financing platform that publicly displays all financing activities, project progress and fund usage. Investors can understand the project dynamics in real time to ensure investment safety and transparency.

5.3 Investor returns and risk management

GreenChain Network Provide investors with a stable return mechanism, and ensure investment security through a variety of risk management means, maximize investors interests through decentralized mechanism, and effectively avoid potential market risks.

5.3.1 Investor returns

- Green energy returns: Investors directly participate in green clean energy projects (such as solar power stations, wind farms, etc.), and the income mainly comes from energy sales and project profits. The income of different types of projects is different, and investors can choose to participate according to their own risk preferences and investment objectives.

- Bond return: Green bond investors receive interest income according to the coupon rate of the bond within the agreed period, and recover the principal at the maturity of the bond. The platform ensures the timeliness and stability of interest payment and principal repayment.

- Fund return: Green fund investors will get returns based on the actual performance of the green projects they invest in. The fund return rate is related to the profitability and risk level of the project. The platform will regularly publish the income situation of each fund to facilitate investors to understand the investment performance.

5.3.2 Risk management

- Multiple risk assessment: The platform conducts strict risk assessment on all financing projects, comprehensively examines the technical feasibility, market prospects, financial status and other factors of the projects, and ensures that the flow of funds is clear and transparent. It provides detailed project information for investors to assist them in making wise investment decisions.

- Investment insurance mechanism: consider cooperating with insurance companies to provide risk protection for some green projects. Reduce the loss caused by natural disasters, technical failures and other unexpected events to investors, and enhance investor confidence.

- Smart contract protection: All investment activities are managed by smart contracts to ensure that funds flow and pay according to agreed rules. The tamper-proof feature of smart contracts effectively prevents human intervention and abuse of funds, and protects the rights and interests of investors.

5.4 Financial support for sustainable energy projects

GreenChain Network not only creates return opportunities for investors, but also provides comprehensive financial support for global green and clean energy projects to facilitate the smooth construction and operation of projects.

Project funding support:

- Project loan: Provide low-interest loans for green and clean energy projects with financing needs to ease the financial pressure of project parties and ensure the smooth progress of project construction and operation.

- Investment support: Provide equity or debt funds for projects through green debt financing, equity financing and other ways to meet the capital needs of long-term development of projects and help the sustainable development of projects.

- Green project certification: Cooperate with governments, financial institutions and environmental organizations to provide certification services for projects that meet green standards. Projects that have been certified are more likely to gain recognition from investors, enjoy more favorable financing conditions and enhance the competitiveness of projects.

- Project development supervision and support: Use blockchain technology to track the whole process of green projects, monitor the use of project funds, construction progress and profit status in real time. Through transparent information disclosure and platform supervision, ensure that projects are advanced according to plan and enhance investor confidence.

- Support for Sustainable Development Goals: Actively support the United Nations Sustainable Development Goals (SDGs), focusing on key areas such as green energy, carbon emission reduction and environmental protection. Support various projects through green finance to help countries and regions achieve low-carbon economy and sustainable development goals.

6 Environmental mining and green clean energy application

GreenChain Network Through a unique mining mechanism in the environment, it innovatively combines blockchain technology with green clean energy applications, encourages global users to participate in green clean energy production and environmental protection, and promotes the popularization of renewable energy and carbon emission reduction.

6.1 Introduction to environmental mining mechanism

Environmental mining is an innovative mechanism designed by GreenChain Network to promote green clean energy production and environmental protection. Users can earn token rewards for participating in green clean energy projects or reducing carbon emissions activities. This mechanism leverages blockchain technology to ensure fair, transparent, and traceable rewards, encouraging more people to engage in green energy and environmental protection efforts.

6.1.1 Mining principle

Discard the traditional energy consumption mining method, and environmental mining is based on the production and use of green clean energy. Participants create "environmental value" by investing, using or producing green energy, and reducing carbon emissions, and receive GCN rewards according to their contributions.

6.1.2 Mining method

- Green energy production mining: Participants who build and operate solar, wind, hydro and other green energy facilities can be rewarded, such as building solar power stations or buying clean energy electricity.

- Carbon reduction mining: Participants take measures to reduce carbon emissions (such as using electric vehicles, optimizing energy efficiency, installing energy-saving equipment, etc.), the platform quantifies their carbon reduction behavior, and distributes token rewards through smart contracts.

- Green investment mining: Investors support green clean energy projects or purchase green financial products such as green bonds to participate in project construction and then receive rewards.

- Mining revenue: The environmental mining revenue comes from the environmental value generated by the participants contributions to green energy production or carbon emission reduction. The platform automatically calculates and distributes the corresponding GCN according to the size of the contribution through smart contracts.

6.2 Participation and reward mechanism

GreenChain Network Provide users with a variety of ways to participate, and design a fair reward mechanism to encourage individuals, enterprises and institutions to participate in green clean energy production and carbon emission reduction.

6.2.1 Participation

- Green energy producers: Enterprises and individuals build green energy facilities (such as solar panels, wind turbines, geothermal

stations, etc.) and connect the generated energy to the platform for trading. The platform calculates and allocates token rewards based on the energy production of the project.

- Carbon emission reducers: Participants take environmental protection measures to reduce energy consumption and carbon emissions (such as using electric vehicles, improving energy efficiency, installing energy-saving equipment, etc.), and each carbon emission reduction behavior is automatically calculated by the smart contract to obtain GCN rewards.

- Green finance investors: Investors buy green bonds, participate in green funds and other financial products, support the construction of green clean energy projects, and receive a certain proportion of rewards for each investment.

- Community members and users: Platform users can participate in various environmental protection tasks (such as participating in environmental protection activities, promoting renewable energy projects, etc.) and receive GCN rewards.

6.2.2 Reward mechanism

- Energy production reward: The platform allocates GCN based on the actual capacity of green energy projects participated by users (such as the amount of green energy produced per KWH).

- Carbon emission reduction reward: GCN rewards will be given according to the carbon emission reduction of users, referring to the carbon emission reduction standards of each region. For example, the carbon emission reduction caused by using electric vehicles instead of traditional fuel vehicles will be rewarded accordingly.

- Return on investment reward: Users who participate in green funds,

green bonds and other financial instruments to invest in green energy projects will receive GCN rewards according to their investment amount and return on investment ratio.

- Mission Rewards: The platform sets up a variety of environmental protection tasks, users can get GCN tokens by completing tasks (such as energy saving and emission reduction, participating in environmental protection activities, promoting green ideas, etc.).

6.3 Quantification of ecosystem contributions and values

GreenChain Network Quantify environmental value and issue token rewards through green clean energy projects and participant behavior within the ecosystem, with precise calculation and automatic execution using blockchain smart contracts.

- Value quantification model: The value quantification model based on environmental protection benefits is adopted to convert the contributions of all participants into environmental values and reward them in proportion. The model takes into account factors such as green energy production, specific carbon emission reduction figures and other green activity effects.

- Fairness and transparency: All contributions are recorded on the blockchain, and the reward distribution is transparent and traceable. Through decentralized governance mechanism, participants can fairly obtain rewards and provide feedback and suggestions on platform operation.

7 Team Introduction

The success of GreenChain Network is inseparable from a core team with rich experience and outstanding professional capabilities. Team members possess deep knowledge in blockchain technology, green clean energy, finance, and sustainable development. They have accumulated extensive experience in global energy transition and innovative applications of blockchain, dedicated to driving significant achievements in the global renewable energy transition and environmental protection.

7.1 Core team members

CEO - John T. Campbell

With over 15 years of experience in blockchain technology and the green clean energy industry, I have held executive positions at renowned energy companies and blockchain startups. At GreenChain Network, I was responsible for overall strategic planning, team management, and global market expansion. My rich experience and foresight have helped our projects gain a favorable position in the global green energy transition.

CTO - Dr. Evelyn Thompson

Focusing on blockchain technology, smart contract, and decentralized application development optimization, with a Ph.D. in Computer Science. Previously served as a Senior Engineer and Technical Architect at a world-leading technology company, with extensive practical experience in integrating blockchain with renewable energy systems. At GreenChain Network, responsible for platform technology architecture design, system security assurance, and innovation promotion.

COO - Michael A. Richards

With over 12 years of experience in the blockchain industry and renewable energy sector, I have worked at multiple multinational companies responsible for operations management. At GreenChain Network, I was in charge of daily operations, project management, and business development, optimizing internal processes, driving the execution of green energy projects, and ensuring smooth

platform user experience and market promotion.

7.2 Advisory team

GreenChain Networks advisory team, composed of experts in blockchain, green clean energy, finance and environmental protection, provides key advice on the strategic development of projects and helps solve technical, market and regulatory challenges.

Dr. Robert Greenfield-Environmental and Sustainable Development Expert

A renowned environmentalist and sustainable development expert, he has worked for a number of global environmental organizations and government departments to promote the implementation of green economy policies and environmental regulations. He provides environmental compliance, carbon reduction and sustainable development advice for GreenChain Networks green energy projects.

Prof. Sarah J. Watson-Blockchain technology and finance expert

Blockchain technology and finance scholars, serving as technical consultants for a number of leading global financial institutions and technology companies, focusing on blockchain-driven financial innovation, especially green finance and green investment. Providing professional support for GreenChain Network financial product design, token economy model and green bond development.

Carlos M. Rivera-Global energy policy adviser

Authoritative expert in the field of energy policy, with rich experience in government and international energy agencies, leading energy policy research and development work in international organizations. Provide advice on GreenChain Networks global expansion and green energy policy compliance to ensure smooth project progress in different regions.

8 Project road map

8.1 Short-term target: 2025

- Platform development and initial launch: Complete the design and development of GreenChain Network basic technical architecture, launch the first version of smart contract, support basic green clean energy trading functions. Start the environmental mining mechanism, encourage users to participate in green energy projects to obtain GCN.

- Ecosystem building and partner expansion: Establish partnerships with leading green energy suppliers (such as solar, wind, geothermal, etc.) and blockchain technology companies. Launch a partnership program to attract global green energy projects to the platform, and establish strategic alliances with environmental organizations and sustainable development agencies.

- Token Issuance and Market Promotion: Complete the first public offering (IDO) of GCN to ensure the transparency and fairness of GCN circulation. Promote the platform ecosystem to attract early users and investors, providing basic liquidity support. Launch GCN on major digital asset exchanges to increase platform exposure and user engagement.

- Global market penetration: carry out promotional activities in major markets such as North America, Europe and Asia to realize international layout. Carry out extensive marketing activities to enhance the visibility of the platform and attract more users and investors to participate.

8.2 Mid-term target: 2026

- Platform Function Expansion and Optimization: Based on user feedback and market demand, improve and expand the platforms functional modules. Increase support for more green clean energy projects, enhance transaction speed and system stability. Provide more advanced smart contract services, support complex energy transactions and cross-border payments, optimize user experience.

- Launch of green financial products: Launch more green financial products such as green bonds and green funds to support investors in funding global renewable energy projects. Develop green investment funds that allow GCN holders to participate in ecological investments and share profits.

- Enhance global user base and engagement: Achieve significant growth in platform users, particularly in countries and regions with high energy demand (such as India, China, and Africa). Launch customized green energy solutions for businesses and government agencies to expand the B2B market share. Strengthen cooperation with green financial institutions, environmental organizations, governments, and international organizations to promote policy support and market recognition.

- Environmental impact assessment and quantification: Provide environmental impact reports and carbon reduction quantification tools for green clean energy projects on the platform, and demonstrate the contribution of the project to global sustainable development. Promote global environmental impact monitoring and compliance certification on the platform to ensure that the project complies with international environmental standards and norms.

8.3 Long-term goals: 2027 ~ 2029

- Become the worlds leading green energy blockchain platform: continuously expand the user base and project participants, to build a globally leading green clean energy blockchain platform. Establish a transparent, secure, and sustainable global energy trading market, promote the green transformation of energy systems in various countries, and achieve decentralized trading and management of global green energy.

- Global carbon neutrality and sustainable development: Help the world achieve its carbon neutrality goals by participating in global carbon emission reduction and environmental protection actions through supporting green energy projects, optimizing energy consumption efficiency, promoting carbon credit trading, etc. Promote the maturity of the global green clean energy market and continue to contribute to global sustainable development.

- Leading the innovation and development of green blockchain technology: continuously promote the deep integration of blockchain with green clean energy technology, launch new technological innovations, enhance the platforms decentralization capability, smart contract service level and green environmental protection application of blockchain. Explore new types of environmental protection blockchain technology to provide more services related to environmental protection and sustainable development.

- Green Energy Data Sharing and Global Collaboration Platform: Establish a global green clean energy data sharing platform to promote collaboration among governments, businesses, and institutions worldwide. Provide a transparent and open data environment to share best practices, technological innovations, and

market trends, driving the rapid development of the global green energy industry. Work closely with global environmental organizations, international institutions, academia, and research institutions to advance green energy research and application.

- Achieving Global Sustainable Impact of the Platform: Expand the platforms sustainable influence on the global environment, economy, and society. By expanding markets, innovating technologies, optimizing ecosystems, and improving green financial products, become a significant force in driving the global green energy transition. Leveraging the platforms global influence, assist countries in achieving the United Nations Sustainable Development Goals (SDGs), promoting the widespread adoption of renewable energy and green economic growth.

9 Disclaimer

GreenChain Network is dedicated to driving the global green and clean energy transition and sustainable development by leveraging blockchain technology to build a transparent, efficient, and decentralized green energy ecosystem. This ecosystem provides solutions for the production, trading, and management of renewable energy, promoting global green economic growth. However, participating in activities on this platform involves multiple risks related to legal, financial, technical, and market aspects. Participants should fully understand these risks before making decisions.

This disclaimer applies to all users, investors, partners and third parties related to [Project Name], clarifying the rights and responsibilities of all parties, reminding participants to fully understand and voluntarily assume the following risks when using the platform and its services:

The GreenChain Network team does not provide investment advice, financial consulting, or other professional services. The platform aims to offer a blockchain solution for green clean energy projects, driving the development of renewable energy markets through technologies such as smart contracts and token economics models. Platform information is for reference only; investors should independently assess investment risks and make their own investment decisions. [Project Name] is not responsible for investment decisions or outcomes.

The tokens on the platform (including GCN tokens) are digital assets, and their market prices are influenced by various unpredictable factors such as market volatility, government policies, and technical issues. Participants should understand the high uncertainty and risks associated with the digital asset market, such as significant price fluctuations, technical vulnerabilities, hacking attacks, and smart contract flaws, assess their own risk tolerance, and seek professional legal, financial, or

investment advice when necessary. GreenChain Network is not liable for any losses caused by token price fluctuations or other investment risks.

The platform is based on blockchain technology to support green and clean energy projects. Transactions, smart contracts and data storage may be affected by technical defects, system vulnerabilities, network attacks or system maintenance issues. GreenChain Network does not assume responsibility for technical failures, data loss, network security issues and other problems in the operation of the platform, and participants bear relevant risks by themselves.

The information, content, and services provided by the platform are offered "as is," without guaranteeing their accuracy, completeness, or timeliness. [Project Name] does not ensure that the platforms services will be uninterrupted, delay-free, or free of system errors, nor is it responsible for any errors or omissions in transactions, data, or information. The operation of the platform may be affected by force majeure factors (such as natural disasters, war, government policies, legal changes, etc.), and GreenChain Network will not be liable for any losses arising from such situations.

Participants should abide by the laws and regulations of their countries or regions when using the Platform, especially the legal requirements related to digital assets, blockchain technology and financial investment. GreenChain Network We are not responsible for the consequences caused by users violation of local laws or regulatory policies, and users shall bear their own legal responsibilities to ensure that their actions are legal and compliant.

The GreenChain Network team has the right to adjust, modify, or suspend platform operations based on project progress and market changes. The platforms operating model, features, token economy, and other aspects may change due to technological advancements, market

demands, regulatory changes, and other factors. [Project Name] reserves the right to independently decide on modifications, updates, or termination of project content without notifying participants and is not liable for any losses resulting from such changes.

GreenChain Network does not assume legal responsibility for misconduct, malicious attacks, fraud, or non-compliant operations on the platform. Users, investors, and partners should remain vigilant to prevent illegal activities such as scams. If any improper behavior is detected on the platform, it should be reported to the platform promptly. GreenChain Network will take measures to ensure the safety and compliance of the platform.

All users, investors and partners participating in the GreenChain Network project should be aware that there are multiple risks associated with the investment activities, technological innovation and market operations of the Platform, and GreenChain Network does not assume these risks. Participants should take responsibility for themselves and decide whether to participate in the project through reasonable risk assessment.