Founded in 2019, Treelion established a blockchain system with the mission to build a "green digital infrastructure" by utilising Elion Group's 30-year experience in green ventures with advanced technologies, including internet of things (IoT), artificial intelligence (AI), and big data.

Our goal is to create an inclusive green financial ecosystem to enhance bankability and liquidity of green assets such as ecosystem services and carbon credits that are currently difficult to trade. With the use of blockchain and other decentralized ledger technologies (DLT), Treelion trading platform and standards can be used to facilitate the transfer of the value of digital assets on a global scale at reduced costs and risks. These technologies can also improve the standardization and value discovery of green assets, as well as the efficiency of proprietary asset transfers.

Treelion's technology solutions facilitates online transfer of values and secures storage of green asset values. It enables asset on-chain registration, decentralised value exchange, distributed data storage, point-to-point transmission, and more.

Treelion is building a green finance backbone node for "Sparkchain Network", the country's new industrial blockchain infrastructure, which can assist the registration, verification and certification of high quality and high value carbon credits to transfer to carbon exchanges. We offer carbon emission certificate traceability management system, digitized carbon accounting, supply chain carbon emission management, carbon quota early warning, and carbon asset forecasting services. Enterprises can upload carbon emissions related information to our blockchain platform, and automatically conduct comprehensive data analysis through on-chain smart contracts, so that decision-makers can make optimal carbon emission related decisions conveniently, accurately and efficiently.

In addition, we also offer blockchain project incubation services for clients and stakeholders to standardize, verify, certify, and register their assets and launch investable products. Through this approach, startups, green companies, and institutions can "tailor to blockchainize" their green projects into "value units". These value units are represented as Non-Fungible Tokens (NFTs). These NFTs are different digitalized certificates representing different green credentials and/or certified carbon credits (VERs) by individual or corporate activities.

The Foundation has launched a mini program/APP to facilitate active participation by individuals and organizations alike. In future, Treelion blockchain technology will allow cross-chain trading between cryptocurrencies and different central bank digital currencies (CBDCs).

Treelion is spearheading a low-carbon economy and lifestyle, building personal and corporate carbon ledgers, realizing trusted recording and tracking, verification and certification, and incentivizing low carbon measures. We have received supports from partnering institutions promoting fintech and green finance, investors, and governmental agencies at ministerial level. They recognize the Foundation's efforts to tackle market pain points using innovative technology solutions.

Treelion – A public blockchain for green trades and a new engine for green economy!

Treelion Foundation Global Advisory Council Members

Erik Solheim,
Chairman

Former Deputy Secretary-General of the United Nations and Executive Director of UNEP

Irina Bukova

Former Executive Director of UNESCO

Tim Groser

Former Minister of Trade, Conservation and Climate Change, New Zealand

Karmenu Vella

Former European Commissioner for the Environment

Izabella Teixeira Former Brazilian Minister of the Environment

Zhu Yong Guan

Academician of the Chinese Academy of Sciences

Helen Hai

United Nations Industrial Development Organization (UNIDO) Goodwill Ambassador for industrialization in Africa

Selected screen shots of Treelion's works in relation to building a digitized carbon trading platform.

Core Technology Solutions

Effectively supports Treelion to build an **autonomous and controllable green finance infrastructure platform**

Big Data
- The combination of self-developed global ecological database and blockchain technology supports data efficiency and full life cycle query.
- The built-in storage layer supports cloud storage and distributed storage.

Zero Knowledge Proof Federal Learning
- Supports multi-layer efficient and secure encrypted data storage, protects all party data ownership and privacy through a variety of privacy algorithms.
- In multi-party collaborations, data do not transfer; data can be used but cannot be seen

HTLC
- HTLC conducts matching transactions through smart contracts, asset transaction funds and information can be exchanged in local device.
- Improved security and efficiency compared to centralized exchanges.
- Supports trusted interactions between heterogeneous chains, that can connect major backbone networks including BSN, Spark Chain Network, Changan Chain etc., greatly reduces the cost of crosschain transactions and information flow.

Digital Asset Modeling Trusted Transfer
- Support flexible modeling of digital asset's multiple structures
- Based on NFT, it supports the digital assetization of data in various fields such as supply chain, intellectual property, medical care, and certification

iService
- Trusted interaction on-chain and off-chain, efficiently supports the integration of various traditional systems such as ERP.
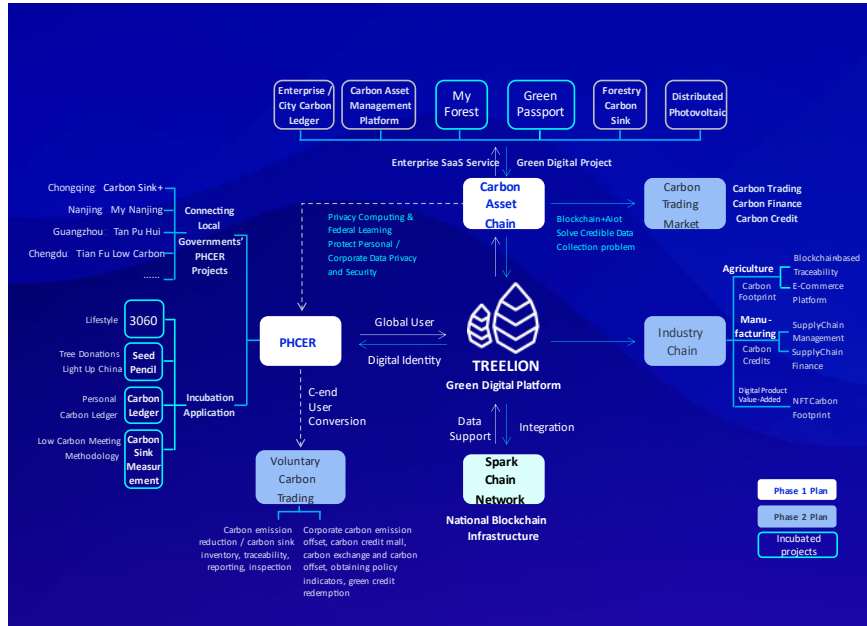
Tendermint
- The first Internet-level applicable Federated Byzantine Agreement. A proven technology used by ChainMake, Facebook, etc.

Treelion Business Matrix

Treelion's unique business model is based on the backbone node of the national Spark Chain Network. The 3 main chains allow individual and corporate participation to create, register, manage, and trade carbon credits (VERs). It is a closed-loop blockchain powered green finance infrastructure that forms an inclusive, safe and credible platform, and facilitates the injection new capitals into the global green economy.

Core Product: Treelion BaaS Platform

Supporting platform for Treelion's green digital infrastructure
Capable of automatic blockchain deployment

Autonomous and Controllable Underlying Blockchain

Self-developed blockchain core technologies, including permission access, consensus algorithms etc., using Rust language to ensure high performance and stability, and achieve independent control of the underlying platform. It is suitable for many fields such as government affairs and finance.

A Complete Set of Blockchain Application Development Tools

It not only provides one-click automatic blockchain deployment, but also realizes cross-chain support through a custom cross-chain network protocol layer, and provides smart contract automatic writing plug-ins, smart contract life cycle management, smart contract security inspection tools, and a complete set of development tools such as an integrated simulation environment for blockchain application development, which greatly reduces the difficulty of blockchain development.

Whole Process Scene Construction

From the blockchain platform to application R&D components to scenario based services, it provides complete and convenient technical service support for blockchain applications, operation and maintenance, and provides full-process scenario construction and technical empowerment for blockchain + ecosystem. In order to meet different network deployment architectures, Treelion BaaS supports multiple deployment modes such as cloud service deployment, private localization deployment, light node deployment, and hybrid deployment.

Support Localized Operating System

Treelion's underlying blockchain platform is the country's first to implement a domestic hardware environment blockchain system, which can run on domestic Kunpeng hardware environments, such as Taishan servers.

Full application of the national encryption algorithm fully comply with the "Cryptography Law" and the relevant requirements of the SCA and adopts the **SM2/3/4** series of cipher algorithms to meet the SCA requirements of various cryptographic modules.

Domestic CPU adaptation: support domestic software environment, including ArcherOS as well as domestic operating systems such as Standard Software and Kylin.
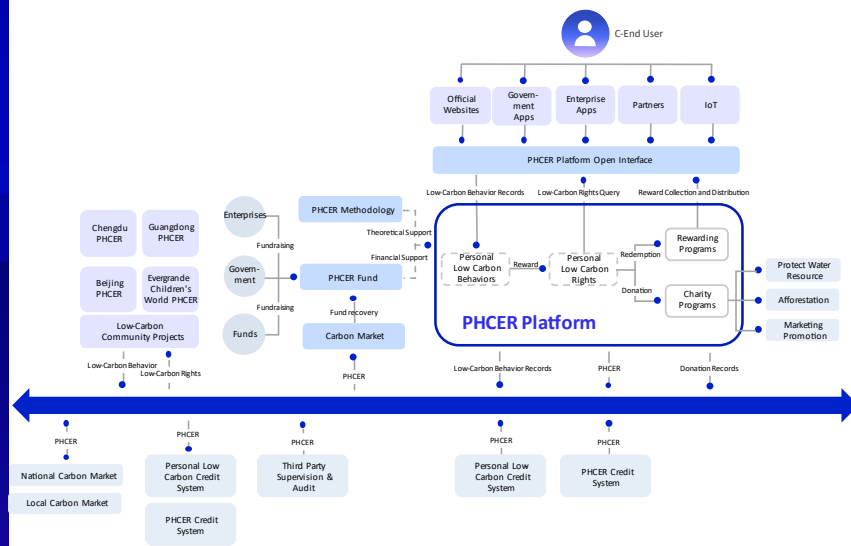
PHCER Chain

PHCER Chain is based on low-carbon behavior data, low-carbon credit systems, and low-carbon digital rights. It helps the public and private sectors better implement PHCER projects at relatively low construction cost, so that everyone can participate in carbon reduction activities, which further supports the active promotion of the construction of a PHCER market.

C-End User

| Official Websites | Govern-ment Apps | Enterprise Apps | Partners | IoT |

PHCER Platform Open Interface

Low-Carbon Behavior Records Low-Carbon Rights Query Reward Collection and Distribution

Chengdu PHCER / Guangdong PHCER / Beijing PHCER / Evergrande Children's World PHCER / Low-Carbon Community Projects

Enterprises — Fundraising
Government — Fundraising
Funds — Fundraising

PHCER Methodology — Theoretical Support
Financial Support
PHCER Fund — Fund recovery
Carbon Market

PHCER Platform

Personal Low Carbon Behaviors — Reward — Personal Low Carbon Rights — Redemption — Rewarding Programs
Donation — Charity Programs

Protect Water Resource / Afforestation / Marketing Promotion

Low-Carbon Behavior Low-Carbon Rights   PHCER   Low-Carbon Behavior Records   PHCER   Donation Records

PHCER / PHCER / PHCER / PHCER / PHCER

National Carbon Market / Local Carbon Market

Personal Low Carbon Credit System / PHCER Credit System

Third Party Supervision & Audit

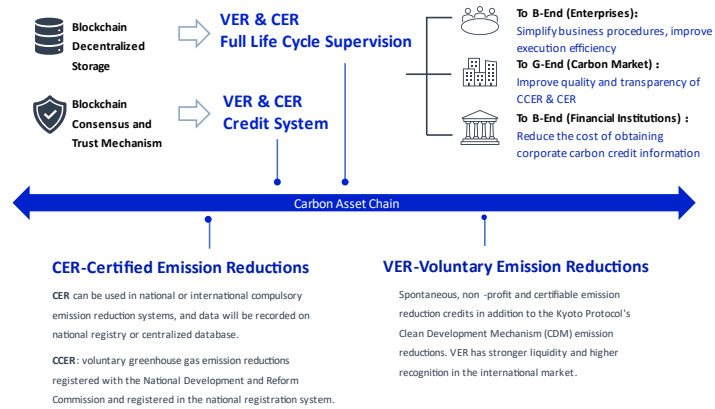Personal Low Carbon Credit System

PHCER Credit System

Carbon Asset Chain

The carbon asset chain aims to play an important role in carbon credit value and trading and other derivatives

The world's First High Integrity CCER Offshore Transaction Completed

On August 9, 2021, the world's first high-integrity CCER (from Elion Resources Group's Kubuqi Eco-Photovoltaic Sand Control Phase II 200MW Power Generation Project) offshore transaction was completed, and the buyers were individuals and institutions in HongKong

Blockchain Decentralized Storage

Blockchain Consensus and Trust Mechanism

VER & CER Full Life Cycle Supervision

VER & CER Credit System

To B-End (Enterprises): Simplify business procedures, improve execution efficiency

To G-End (Carbon Market): Improve quality and transparency of CCER & CER

To B-End (Financial Institutions): Reduce the cost of obtaining corporate carbon credit information

Carbon Asset Chain

CER-Certified Emission Reductions

CER can be used in national or international compulsory emission reduction systems, and data will be recorded on national registry or centralized database.

CCER: voluntary greenhouse gas emission reductions registered with the National Development and Reform Commission and registered in the national registration system.

VER-Voluntary Emission Reductions

Spontaneous, non -profit and certifiable emission reduction credits in addition to the Kyoto Protocol's Clean Development Mechanism (CDM) emission reductions. VER has stronger liquidity and higher recognition in the international market.

Treelion uses blockchain smart contracts to perform carbon credit conversions of various standards in the marketplace, both CER and VER can be traded on this chain
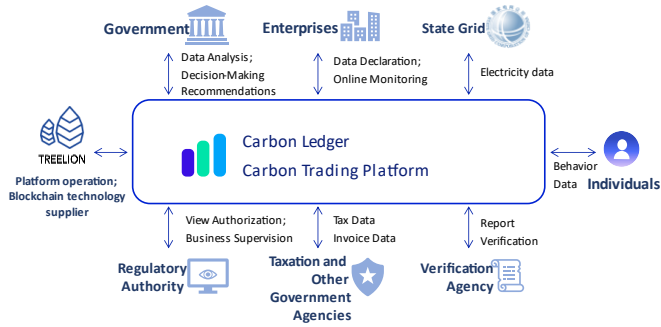
Carbon Ledger Carbon Trading Platform

Create a carbon account and carbon trading platform that connects "individuals corporations, governments, verification, consulting and regulatory agencies". Based on the privacy protection, non-tampering, and traceability features of the blockchain, realize the on-chain evidence and traceability of the carbon footprint of individuals and SMEs.

Introduce the EU carbon market model, record low carbon behavior of individuals, governments, enterprises, and institutions on the ledger, help government to formulate carbon emission right standards, and encourage participants to earn carbon credits and conduct trading on-chain . **Promote carbon credit market and enhance bankability and liquidity of carbon assets.**

Government — Data Analysis; Decision-Making Recommendations

Enterprises — Data Declaration; Online Monitoring

State Grid — Electricity data

TREELION — Platform operation; Blockchain technology supplier

Carbon Ledger Carbon Trading Platform

Individuals — Behavior Data

Regulatory Authority — View Authorization; Business Supervision

Taxation and Other Government Agencies — Tax Data Invoice Data

Verification Agency — Report Verification

- **On-chain carbon emissions account:** Reliable measurement of carbon emission assets
- **Multidimensional data on the chain:** One-click generation of carbon emission report
- **Secure sharing on the chain:** Efficient coordination of carbon emission verification
- **On-chain data traceability:** Carbon assets can be checked and traced
- **Intelligent data analysis:** Provide carbon reduction potential analysis
- **On-chain carbon sink trading:** Privacy report is safe and transparent

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Collaboration with National Ministries

CAICT 中国信通院

生态环境部宣传教育中心
Center for Environmental Education and Communications of Ministry of Ecology and Environment

Spark Chain Network – National Backbone Node License

Treelion will help the CAICT of the Ministry of Industry and Information Technology to build a backbone node to implement blockchain+ carbon neutrality. The backbone node of the Spark Chain Network provides basic service capabilities such as sub-link access management, digital identity management, and identification resource allocation to expand interoperability. In order to expand intercommunication, the backbone node will access industry/regional applications, and build an industry/regional industrial ecological cluster development model.

Key facility empowered by blockchain projects and applications	A connector that combines main chain resource services and industrial applications	The business hub of industrial Internet and blockchain industry technology

3060 APP Five-Year Project Cooperation Agreement

Treelion signed a five-year cooperation agreement with the Center for Environmental Education and Communications of the Ministry of Ecology and Environment to promote 3060 APP nationwide.

3060

BEIJING 2022

Designated Application for "Millions of Riding Helps Winter Olympics Blue" event

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