一元电力
YI YUAN CHARGE

Open Market White Book

一元電力

建構於區塊鏈上的能源經濟
BUSINESS OVERVIEW

“All Superchargers are being converted to solar/battery power. Over time, almost all will disconnect from the electricity grid.”

—— Elon Musk

OUR VISION

Shared energy system is a means to revert electricity to its users. We believe that through new technologies and innovative market mechanisms, every user can own energy. The core of 一元電力's vision is to create new energy value chain.

OUR MISSION

This is an imminent energy revolution. We will stop the oligopolists of energy, and enable every one to freely and easily become a participant of the “new energy market”.

OUR TEAM

We earnestly hope that future electricity market advances towards, deregulation, decentralization, decarbonization and digitalization. 一元電力 combines charging stations with Internet of Things, bringing the functionality and practicality of charging stations to a higher level than that of the traditional ones; as a result, 一元電力 will deliver computerized data, agile development, integrated and synchronized systems, and better accessibility.

Open Market White Book

Contents

Executive Summary

Energy 3.0

1.1

Energy economics of modern day society has shown its impact to the environment through climate changes; fossil fuel and carbon emission is one of the greatest crises of the 21st century. Nevertheless, in times of adversity rises the opportunity of energy innovation.

一 元 電 力 sets its eye on "energy 3.0" when structuring a new energy system. Low carbon emission, shared power resources and independence of energy are the three pillars of the restructuring of energy ecosystem. There will be 3 phases of energy market revolution, from setting up charging stations as nodes in the Internet of Things, to introducing new technologies as the infrastructure of electricity value chain and its trading mechanisms. This will give the ownership of energy back to its individual users.

Current Issues

1.2

- **Inadequacy of consumer charging infrastructure**：There is an imbalance between consumer charging facilities (charging stations) and electricity demand. An under supply in electricity leads to the inability to form economies of scale in upstream energy production and midstream electric grid management.
- **Unclear and mixed industry standards**：The lack of nationwide standards for the electricity industry results in charging accidents with electric bikes.
- **Disunited economic value chain**: upstream, midstream and downstream operations of the electricity industry are spread out and disconnected and consequently, economies of scale cannot be formed.
- **Energy industries requires massive funds to kick start, and a long payback period.**

Executive Summary
Solutions

1.3

- **Proof of stake and crowd funding – scaled up funds**: solve the pain point of having to invest large scale in the energy industries; create a win-win model for liquid fund using proof-of-stake mining of electricity; set up a mutually beneficial relationship between consumers, investors and companies.
- **Technological solution**: energy cloud, IoT cloud and AI Cloud to solve the dysfunction of electric grid system, in addition to blockchain and distributed ledger to solve problems in data storage, data credibility and risks of data manipulation.
- **Token economy**: connect the currently disconnected industries to build an economy, and at the same time adopt a more efficient settlement method by using structured financial product model to hedge the risks of major electricity users.

Background
Industry Summary

2.1

International tech giant Google announced a 2 billion USD purchase of renewable energy in 2019 Q3, and as of now, their usage of green electricity has reached a proportion of 40%. International Renewable Energy Agency (IRENA) has also forecasted in 《Renewable Power Generation Costs》 that, "after 2020, cost of generating renewable power is likely to be lower than coal-fired power station".
Other than that, the consumer side of the energy sector is accelerating together with the supplier side; the cost of batteries have continued to fall and this will speed up the electrification of passenger cars. In the《DNV Energy Transition Outlook Report》published by DNV GL in 2020 September, it is forecasted that by 2032, 50% of passenger cars sold will be electric and as fossil-fueled powered passenger cars continue to fall out of use, total passenger cars will be 50% electric by 2037.

Dormant oriental energy transition market

China has been ranked number 1 in terms of carbon footprint since 2004. In 2017 alone, their CO2 emission took up 28.3% globally. Facing worldwide pressure to change their energy structure, China has promised to reduce 60~65% of carbon emission, the start of which is to adopt electric bicycles. This creates an opportunity for China to become an electricity exchange hub and an innovative energy market.

According to the National Bureau of Statistics of China, the growth rate of electric bicycles has been at an unprecedented rate over the past few years, as shown in the table below:

	Urban households (Average number of electric bicycles owned per 100 households)	**Rural households** (Average number of electric bicycles owned per 100 households)
2013	39	40.3
2018	57.5	74.8
5-year growth rate	47.4%	85.6%

Following this speed of growth, in 5 years' time, the market worth is projected to exceed over 150 billion RMB. Energy transition is under way in China, and through technology advances, lower costs or resigned market mechanisms, green energy usage rate can be raised. A liberalized electricity market will then become a rigid demand of China's energy industry.

It can therefore be seen that mass demand of charging stations for electric bikes, smart electric grid of the charging stations and the power diversification as a result of smart power grid will be the pillars of an open market, and bring about the next generation of power transition.

Background

Market Opportunities

The first step of energy transition is to expand electric grid and electric bike charging stations will be 一元電力 's starting point.

- **Insufficient infrastructure and supply**: There is an imbalance between consumer charging facilities (charging stations) and electricity demand. An under supply in electricity leads to the inability to form economies of scale in upstream energy production and midstream electric grid management.
- **Lack of national standards: Unclear and mixed industry standards**: The lack of nationwide standards for the electricity industry results in charging accidents with electric bikes.
- **Disunited economic value chain**: upstream, midstream and downstream operations of the electricity industry are spread out and disconnected and consequently, economies of scale cannot be formed.

2.2

Foundation stone of energy infrastructure

The State Council of PRC has published《The White Book of China Electric Bicycles and Energy Saving》(referred to as the new national standards below) in 2019, announcing transitional policies in 22 provinces. The most important of all is regulation of battery weight; after 2020, the weight of a bike must be smaller than 55 kilograms, and right now, led-acid batteries, used by the majority of China’ s electric bikes, cannot meet this requirement.

As a result, substituting led-acid batteries with lithium batteries is inevitable, and the prevalence of electric bikes and charging stations symbolizes the start of power diversification – using the electricity traffic network of charging stations as the basis of smart power grid.

Aside from diversifying the electricity market in the next steps, this will also open doors for an electricity exchange mechanism. These opportunities will allow 一元電力 to accelerate a new electricity market ecosystem by new technologies and market mechanisms.

Background
About 一元電力

2.3

《一元電力》is a world-class smart power system integrator. Our management team has decades of experience in the energy industry, covering hardware development, manufacture and operations management.

《一元電力》began in 2014 with offices in Taipei, Dongguan and Yentai. In 2018, we created “smart charging station”, and immediately broke into the market in over 10 provinces including Guangdong, Hunan, Anhui, and Fujian. In merely 2 years, 《一元電力》became a government-approved company, and set up thousands of charging stations, succeeding in commercialization.

In addition to an outstanding record in hardware manufacturing, location set-up and operations, 《一元電力》adopted blockchain and AI technology last year to build a more efficient and transparent mini renewable energy network and exchange platform. This allows end users to participate directly in the creation of smart living. 《一元電力》is now the most trusted partner for setting up smart energy infrastructure, and will continue to add value to renewable energy sectors.

Market Analysis and Solutions
Industry Bottlenecks and Pain Points

3.1

To enter a new era of energy, there is a massive need of funding. The existing model is a top -down approach to changing industry structure; however, many obstacles stand in the path of change and hinders the pace of revolution:

To enter a new era of energy, there is a massive need of funding. The existing model is a top -down approach to changing industry structure; however, many obstacles stand in the path of change and hinders the pace of revolution:

- Insufficient **infrastructure**
- Long payback period and large required scale of energy investment
- Unstandardized **regulations**
- Disunited **economic value chain**
- Over reliance on middle-scaled electricity system and inefficient operations

In the past 10 years, the Chinese electricity market has undergone a major change and has begun leading the way for renewable energy. China's wind power increased from 17,599 megawatts (MW) in 2009 to 184,665 MW in 2018; solar power rose from 3,113 MW in 2009 to 175,030 MW in 2018; the growth rates of these are a whopping 949.29% and 5522.55% respectively.

According to IRENA's《REmap2030》report, if China is to reach a 20% proportion of renewable energy usage by 2030, the investment amount will add up to over 145 billion USD. Hence, building up recyclable, expandable and decentralized electricity infrastructure is the core of developing a brand new renewable energy system.

Market Analysis and Solutions

Obstacles of Energy Investments

3.2

In the investment environment at the moment, only large enterprises and funds have the capacity to join the energy investment market. This results in inefficiencies in the energy investment market and in order to attract more influx of funds, there are a set of key obstacles to overcome:

- **Large scale of required fund**：Regardless of a single charging station or a spread of charging stations in different location, the required funding often exceeding millions of dollars, and small individual investors find it difficult to enter the market.
- **Limited locations and immature technology**：A high search cost is a barrier to entry of this market. Setting up a charging station requires evaluation of local policies, climate, return rate and neighborhood acceptance.
- **Misjudgments on facility suppliers and infrastructure builders**：The facilities, the builders and the quality thereof decide the overall cost of charging stations. If the stations break down prematurely, there will be no payback for the investment; this poses as a great risk for investors with no in-depth knowledge of the energy sector.
- **Long payback period of energy investment**：Renewable energy investment project often takes years and even decades to pay back. The long payback period means higher risk of facility break-downs and inflation reducing return rates.

Market Analysis and Solutions
Solutions

"One-stop energy investment management platform", created by 一元電力 , offers investors one-stop servicing of investment. This playform uses electric bike charging station as a basis of development, and adopts blockchain, internet of things and AI technology to build up token economies, smart electric grid management, crowd-funding of electricity infrastructure, decentralized exchange market and market derivatives. It will connect the supply chain of electricity market, release investment from upstream electricity suppliers and kickstart electricity exchange.

3.3

- **Crowd-funding: shared benefits, crowdsourcing and proof-of-stake model**
  一 元 電 力 will utilize crowd-funding and proof-of-stake mining to obtain necessary funds for charging station construction, solving funding issues of expansion in the energy industry.
- **Token economy**
  The dual token mechanism provides investment opportunities for small scale construction of charging stations, and later can be expanded into renewable power facility crowd-funding and power settlement market, connecting the industry from upstream to downstream to the consumer. This creates a frictionless "value transfer and real-time settlement", which truly unite industry to form a common economy.
- **Short payback period and flexible use of funds**
  一 元 電 力 offers short-term investment projects with a duration of 3 to 36 months, during which investors can obtain investment returns. After the projects finish, they will receive full principal to invest in other projects.
- **Decentralized energy system and integrate the power exchange market.**
  Through the initial phase of smart charging station design, 一元電力 construct a electricity value cycle between suppliers and consumers. Then, blockchain tokens will be introduced into the investment of power generation infrastructure to create a decentralized electricity industry cluster. In the end, iwhen the system matures, the smart grid will be the core of the power value chain, and the development of subsequent derivative products and services will liberate the power exchange market.

Market Analysis and Solutions

Market Entry Strategies

3.4

2017-2019 (Achieved)

Charging station constructions and proof of feasible commercialization

- **Consumer facilities Infrastructure**：set up 3,000 charging stations in 10 Chinese provinces and verified the feasibility of the business model and its profitability
- **Team and products**：finished developing consumer facilities and put it to use in the market, while integrating our AI power grid team, internet of things and blockchain technology
- **Local strategic partners**：partnered with China’s top four property management companies, local authorities, China's three major battery suppliers to form a strategic cooperation
- **National standard layout**：obtained China's first CVC national certification and completed the layout according to the "new national standards"

2020-2021 (Current stage)

Large-scale infrastructure construction: introducing token economy, integrating charging and consumer terminals, international market trials

- **Infrastructure**：crowd-funding for large-scale layout, building a stable electricity consumption
- **Power generating market**：liberalizing energy investment and contructing small-scale green electricity power station
- **Token economy**：creating mini economic cycle between consumers and charging stations, initiating proof-of-stake mining for power supply
- **New industry standards**：fully abiding by the “new national standards”, and setting up lithium battery exchange spots
- **International market trials**：collaborating with Thai and Vietnamese strategic partners to set up smart charging stations and trial the international commercialization model

2022-2025

Realizing decentralized energy economy, entering the international market, and adopting power transaction settlement

- **Building the next generation of energy systems**：to expand energy exchange platforms, to connect upstream power plant to downstream consumer and link up the next generation of energy systems
- **Entering international markets**：to expand large-scale in Southeast Asian countries and to run trials in more markets
- **Token economy**：to introduce token economic model to the overall operations of the power system to achieve large electricity settlement function and to expand the useable quantities and scenarios for tokens
- **Energy derivatives market**：to launch various types of energy derivative financial products and to open electricity derivatives market

Power System Solutions

4.0

In the traditional power system, in order to improve the security, it is common to separate main system from the external network. In many of these cases, several issues are often observed:

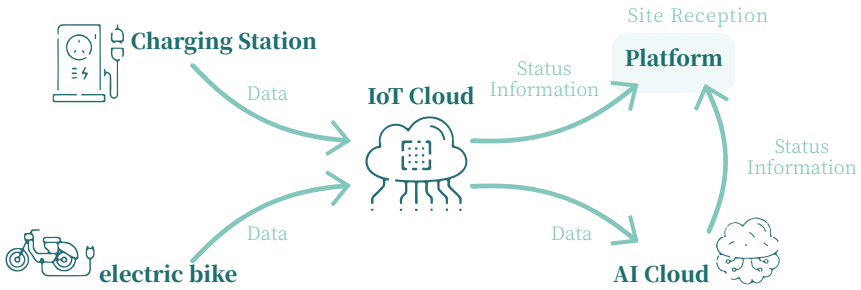
- **Disconnection between internal and external data,** so even though there is a large amount of data collected, none can be visualized
- **No further data analysis** can be made to improve the operation efficiency of power systems
- **No mature Internet of Things system,** nor automated registration of IoT devices, which makes mass collecting device data difficult
- **Unstable connection:**in past cases, even if IoT is set up successfully, connection might not be stable
- **Poor credibility:**collected data is stored in databases, but there is no tamper-proof mechanism, which greatly reduces the credibility of data.

一元電力 will provide the best solutions to the problems above. We will introduce**5G technology** – increase internet bandwidth and reduce latency; **IoT system** – collect a large amount of device data; **blockchain network** – create a data system that cannot be tampered with; **AI technology** – automate power management and storage to solve the problem of peak hour power consumption.

The following solutions tackle upstream and downstream power industries' existing pain points. We will simply divide the solutions into the "three clouds", namely "IoT cloud", "AI cloud" and "energy cloud". Besides, IoT cloud, blockchain technology, and energy cloud represent data flow, money flow, and electricity flow respectively.

Power System Solutions

Internet of Things Cloud



4.1

Iot cloud is the receiving end of the three cloud solutions. Through IoT cloud technology, we can collect data on various facilities of the energy infrastructure and conduct preliminary processing of it. This system is based on blockchain and big data and mainly solves the following problems:

- **Data transmission:** 一 元 電 力 's power system will use decentralized identifier (DID) technology, which can automatically register IoT devices, so that all information can auto-transmit to the blockchain for storage
- **Data preservation:** most traditional data storage schemes use SQL databases, and they can never avoid a fatal loophole – no precautionary mechanism for data tampering. There are two main advantages of using blockchain technology as a database storage solution:
  1. Untamperable: by synchronizing information to the blockchain network, hackers and system vendors themselves will not be able to modify it
  2. Decentralization: remote backups are completed automatically. If one of the data centers is attacked, it is possible to instantly switch to another data node. This improves the stability of user experience and make the servers more accessible
- **Data use:** this system will collect data from smart power grids, automobile networks, charging station status, etc.
  1. Smart power grid: in addition to purchasing lower-cost electricity through AI calculated strategies, smart power grids can regulate energy storage and release during off-peak and peak hours
  2. Automobile networks: analyzing users' vehicle usage, battery and electric current data inn the cloud system, we will adopt different mix of strategies to make judgments and predictions on whether the users need renewal or repair of their cars, and immediately notify the users with recommendations of appropriate solutions or product

IoT Blockchain

Combining IoT facilities with blockchain ledger technology enables data storage and real-time settlement to possess the following characteristics of blockchain:

- **24-7 operations:** in peer-to-peer network, the more nodes in the service, the less likely the said service will be interrupted, thereby achieving 24-7 non-stop operation
- **Multiple backups:** when all nodes are connected to the decentralized blockchain network, all data is synchronized quickly and completely. In blockchain networks, there are often hundreds or thousands of nodes, which means that data has hundreds or thousands of backups
- **IoT:** first, we will set up DID in all IoT devices in the system, and then through combining IoT and its blockchain technology, send all data to the blockchain for storage. Based on blockchain technology, all IoT data is given blockchain characteristics

IoT Big Data

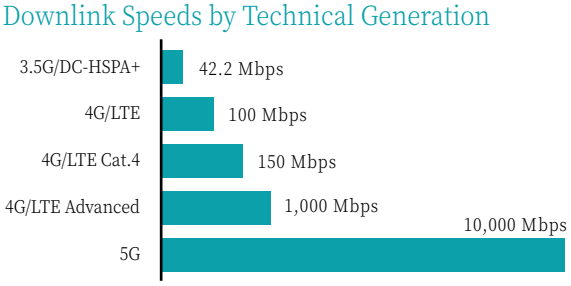
一元電力’s big data will be stored in blockchain, and analyzed into big data cloud. Big data can be separated into several directions, including power consumption analysis and power status analysis.

- **Battery status monitoring:** a dedicated research team analyzes the status transitiosn between charging stations and electric cars. Data of electricity discharge and automobiles’ electric current can be used to monitor the health of batteries; data of I-V curve can be used to deduct and hence regulate charging speed, electricity leakage and life cycle
- **Charging station status:** charging stations are a pivotal component of 一元電力’s system. Through adopting cutting-edge 5G technology, data is stored in blockchain and analyzed into big data cloud
- **Disaster prevention:** in recent years, there have been thousands of severe incidents caused by combustion of electric bikes in China. Real-time monitoring and remote controlling can effectively solve this problem
- **Automobile network:** in IoT of cars, in addition to collecting the status of all batteries, it can also collect the driving status of the vehicle. If it is equipped with automobile network it can further give insight to the usage of the car

5G Devices

The main consumer infrastructure is charging stations.

All charging stations will use 3G/4G/5G for network communication; this turns millions of charging stations all over China into 5G nodes, with high-speed network bandwidth, secure network data transmission, and lower latency time. This will improve user experience, speed of charging station data collection, speed of payment and the supervision of charging station status.



Power System Solutions

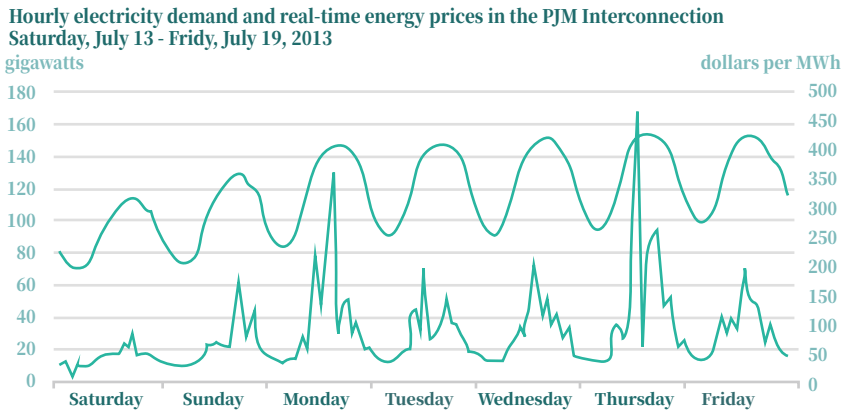
AI Cloud

AI is the main decision-maker for power purchase in this project. Our system will import the AI prediction algorithm for power purchase, developed by professor Lin Chuncheng of artificial intelligence at Taiwan Jiaotong University. Professor Lin has won an IEEE Senior Member and has published more than 150 related papers and journals, and his AI algorithm is based on a large amount of past electricity price information for machine learning.

In AI cloud's big data, China's AI cloud real-time monitor all provinces' electricity price quotes, and it also collects information of all power companies price information. AI team then analyzes historical data to forecast the offer price of power companies in various regions, different seasons and different time and to regulate electric current.

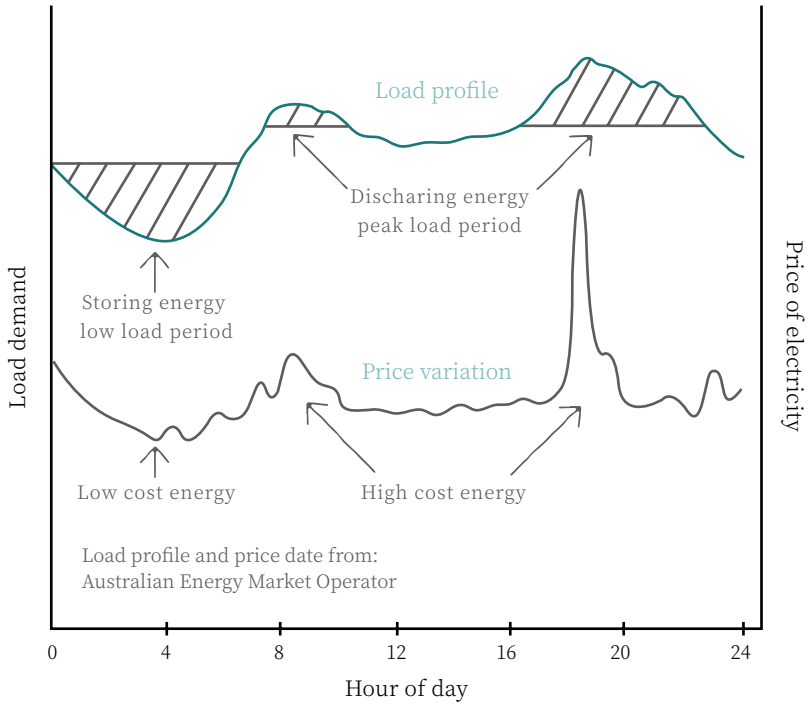
4.2

- **Power supply forecasting:** in addition to predicting the best electricity price, AI cloud can also solve the difficulties of predicting electricity demand. If the required amount of electricity cannot be supplied when needed, there will be insufficient power supply, which in turn will cause power outage in both household and industrial electricity network and lower productivity

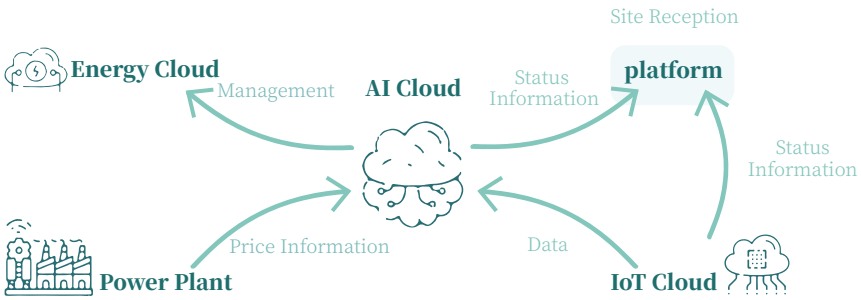


Hourly electricity bill and real-time energy price map in the internal connection

- **Off-peak energy storage:** AI cloud will also predict the power generation and demand of power companies. The best time to purchase electricity can therefore be revealed. When electricity is purchased and dispatched during off-peak hours, electricity can be bought at lower prices and the problems of insufficient productivity of power plants during peak hours can be solved.



- **blockchain records:** the most common problem in traditional ledgers is the inconsistency of accounts. Reconciliation and price settlement require a lot of manpower and time. AI cloud will adopt blockchain ledger solution proposed by Biilabs, so that transactions can be received real-time. This greatly improves the credibility of data, reduces error rate and required personnel. In addition, this system also inherits the openness, transparency, encryption, decentralization, etc., among other characteristics of blockchain.

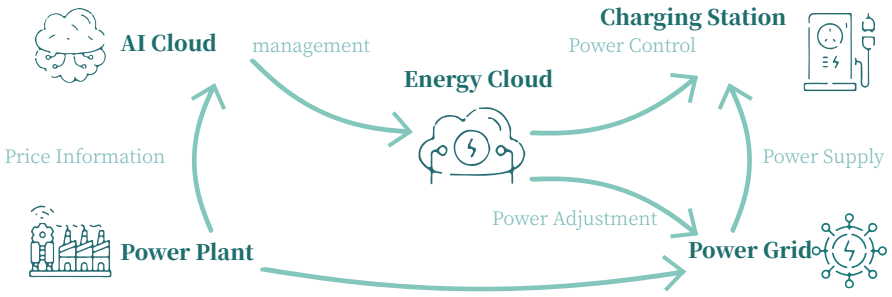


Power System Solutions

Energy Cloud

4.3

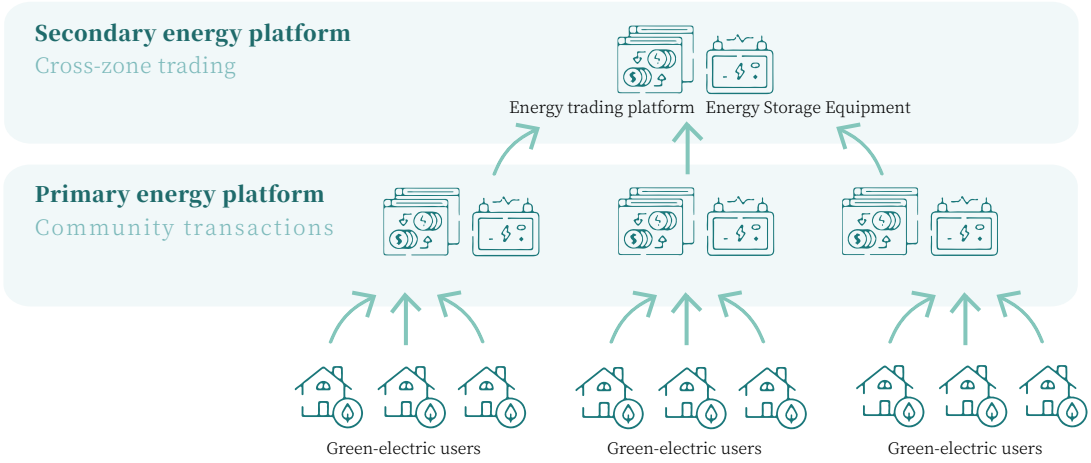
Energy cloud in this system mainly plays the role of power regulator, power dispatch and a central system which integrates three modules – upstream energy producers, midstream power grid dispatch intermediaries, and downstream consumer infrastructure. In the early stage of our strategy, a large number of electric charging stations will be built to be the ending node of power transmission, responsible for power storage and sales.



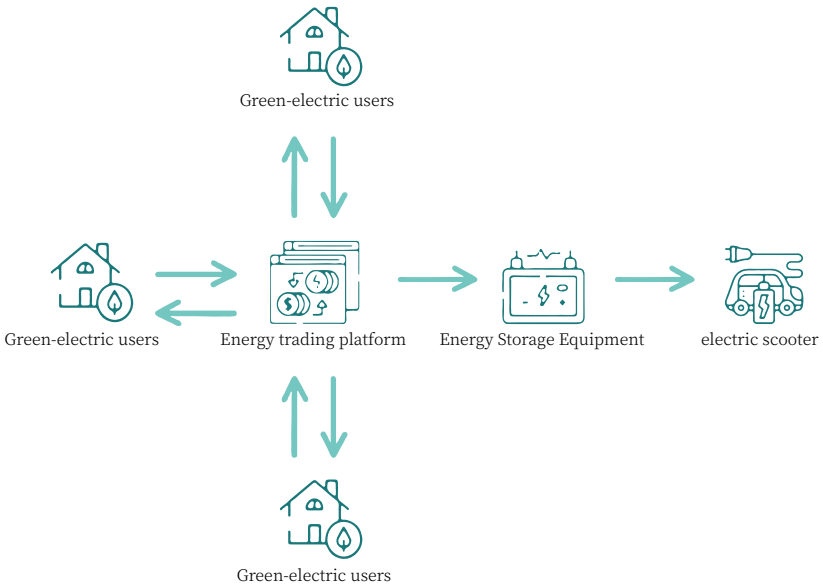
Upstream	Midstream	Downstream
Power Generation	**Power Grid Device**	**Application**
Traditional	Transmission Facilities	Distribution Management	Energy Management
Hydropower	Power Grid Construction	System Integration
Wind	Power Grid Operation	Electricity Retailing
Solar	High voltage AMI	Low voltage AMI	Storage Technology

The first is power generation module. Traditional power generation is mainly thermal powered, but in our model, the power plants built through crowd-funding will be focused on renewable energy, including solar power, hydro power, wind power, and geothermal power. Green energy not only conforms to global trend, but has the advantages of being more diverse and smaller in power generation units. This is conducive to a decentralized energy model, breaking away from the existing over-centralized system.

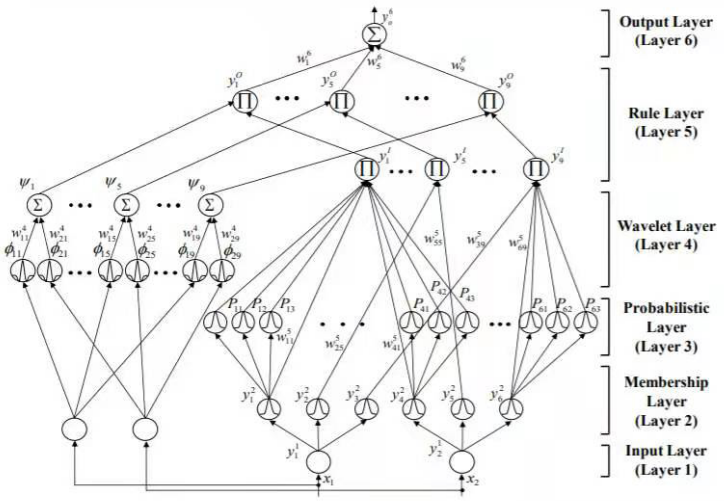
The second module is power grid system, which can dispatch power generated by power plants to where it is needed. In addition to dispatching electricity, the grid has energy storage facilities for adjustments, and it can buy electricity to store during off-peak hours at a lower price.



The third module is power-consuming facilities, and charging stations are an important module in 一元電力’s strategy. In the near future, the charging stations provide not only charging services, but also battery exchanges, offering two-wheeled or three-wheeled battery car a quick substitute battery without the need to spend five to six hours waiting for charging.



Network Structure of PWFNN Controller



$$E_{ESS} = \mathrm{Max}\left\{\sum_{i=a}^{i=a+N}(\left|P_{wind}(t_i) - P_{out}(t_i)\right|)\Delta t\right\}, P_{wind} > P_{out} \text{ or } P_{out} > P_{wind}$$

$$\Delta t : \frac{\text{Take a Sample in Every Hour}}{\text{One Hour}}$$

The next generation charging stations developed by 一元電力 have obtained the first CVC national certification issued in China, and 一元電力 has been approved by partners in cities around the country for its research and development capabilities. Our charging stations have been laid out in more than 10 provinces in China and succeeded in commercialization.

Blockchain Technology

5.0

Since the birth of Bitcoin, stemming from blockchain technology, many banks, financial institutions, insurance companies, and traditional industries have all hoped to find new solutions in blockchain technology to improve the company’ s operational efficiency and reduce the company’ s operating cost. This makes blockchain one of the most cutting-edge financial technology solutions in modern days.

Structure

5.1

Node

In our blockchain ledger system, incentive token YYE for electricity production uses decentralized Ethereum blockchain ledger technology. In this system, nodes store complete units of the blockchain. As of now, there arethousands of blockchain network nodes worldwide, which means that this ledger has thousands of network backups. If there are problems with several blockchain ledger nodes, they will not affect the operation of the trading system and the accuracy of the data.

Network

The interaction between blockchain nodes adopts a peer-to-peer network. The most important feature of a P2P network is that it cannot be blocked, and it enables each node to be a service provider and a client at the same time.

If the user wants to check records or transfer assets, he or she may choose to operate on a blockchain node. When a new node with no record is operated for the first time, P2P network will automatically search for nodes with YYE transaction ledgers nearby to obtain transaction information. The node is therefore a client. After completing the synchronization of blockchain information, it can provide other newly added nodes its blockchain transaction information.

Client (Wallet)

The wallet is the only way for users to keep their assets. The client terminal will integrate users’ login information, electric car data in the automobile network, investment returns in terms of tokens and the wallet function of cryptocurrency.

Blockchain Technology
Settlement System

5.2

In traditional industries, clearing and settlement systems have been faced with grave issues over time. Its problems include the time lags in clearing and settlement, which will cause a significant gap between the data in the system and the actual transaction amount. In the absence of abnormal settlements, this leads to long transfer time for capital flows.

If a major settlement error occurs during the clearing and settlement process, the cost that the company bears is not simply time, but also a huge capital loss.

The introduction of blockchain technology completely eliminates the time cost of fund transfer and the formidable cost of errors. Moreover, automated clearing and settlement system based on blockchain technology greatly reduces labor costs.

Storage Medium– Wallet

In the blockchain ledger system, a wallet is the most direct in terms of end user interactions and an imperative medium for users to store assets. The wallet files will be encrypted with the AES-256 symmetric encryption algorithm, to achieve higher asset security than traditional centralized systems.

- **Private key:** the private key that controls ERC-20 assets is generated by a random number generator. The length of the private key is up to 256 bits, which is equivalent to the configuration space of 1077. The random number generator will take out one number from the 1077 space to use as a unique key to the account. Owning the key means having control of the account, which includes controlling all assets, interacting with smart contracts, trading assets, etc.
- **Public key:** the public key can be obtained by converting the private key with the Elliptic Curve Cryptography, and it can be used to calculate the receiving account address. To verify whether the transaction signature is valid, the public key must be checked with the private key. If the signature matches, it is called a legal transaction on the chain.
- **Address:** deriving address from the public key is an irreversible process, so this means that, even if account addresses are public, the attackers cannot obtain the private key and gain control of accounts in the blockchain ledger system . This ensures security of the assets in the wallet. Even as an administrator of 一元電力 's platform, we will have no authority to transfer any assets of users.

Exchange Medium– Token

ERC-20 is a standard protocol for token issuance in Ethereum blockchain. YYE, incentive token for electricity production in 一元電力 is issued based on ERC-20.

YYE token held by users will also be stored in the wallet. It can be used to stake on the early stage plan to scale up charging stations and later regained from shared profit mining of electricity token YY; it can also be used to participate in the Investment of later stage power production facility construction.

During this period, all capital flows are open and transparent. What is more, there is no room for tampering, fraud or manipulation. This, to a great extent, guarantees safety of users assets and investment rights, and also saves a lot of the project firms' settlement and reconciliation time and cost.

Merits of Blockchain

6.0

The most significant feature of blockchain technology is that it cannot be tampered with, and it also comes with the feature of decentralization.

Applying it to the energy industry will completely change the current situation of operation inefficiency, forged financial data, and difficulties in integrating parts of the industry.

Disintermediation and Trusted Public Ledger

6.1

- **Open and transparent:** blockchain is a new accounting method. Through cryptographic techniques such as hash algorithms, asymmetric cryptography, etc., a ledger which cannot be manipulated is possible, and all its data is open and transparent
- **Tamper-proof:** All YY and YYE transactions are permanently stored in the blockchain ledgers as permanent proof of transactions for investors and consumers. Because the blockchain technology can not be tampered with, these records of transactions cannot be deleted
- **Traceable:** based on the openness and transparency of blockchain ledgers, all transactions that have occurred in the blockchain will be recorded in the ledgers. In other words, users can check all previous flows of capital, and they do not need worry about the platform's manipulation or additional token issuance.

Merits of Blockchain

Transaction Efficiency

6.2

- **Lower threshold for account opening:** in traditional finance, one must go to a financial institution to complete a long process of account opening if they want to hold an asset, and account holders often face irregular asset verification checks
- **Quick entry and instant settlement:** Ethereum's blockchain distributed ledger only takes an average of 15 seconds to complete a transaction, and the operating hour is 24-7 with no interruption nor business cycle issues
- **Reduced cost of capital transfer:** 一元電力 uses blockchain technology for asset management and transfer. Blockchain technology has the same level of trust and asset security as banks, and saves the time lost between transaction and verification, in addition to large sum of labor cost
- **No distance limit:** inheriting the characteristics of blockchain technology, no transactions in 一元電力's economy need to tolerate centralized financial institutions' transaction verification mechanisms, verification time, time differences in cross-border transactions, or cross-bank or cross-border transaction fees. Regardless of where the participants are, in different provinces or even countries, they can directly transfer money instantly, depictng instant, convenient, fast, stable and safe features of blockchain

Other Advantages

6.3

- **Privacy:** based on the transaction system abiding by blockchain token protocol, account private keys are all generated by the random number generators, so there is no need for any name verification nor submission, or leakage, of much personal information. This thereby achieves complete transaction privacy
- **Splitability:** the smallest unit of tokens issued under ERC-20 can be divided into 10 – 18. Therefore, if the token's worth increases significantly in the future, it can still be traded as small as 0.000000000000000001 in its smallest unit, so that investors have greater flexibility in their positions and transactions
- **DAO decentralized governance:** the full name of DAO is Decentralized Autonomous Organization, a programmatic automation governance mechanism based on smart contracts. DAO avoids the opaqueness of centralized institutions and system administrators, and enables autonomy of participants

Token Economic Model

Overview of Token Cycle

7.1

In order to speed up economies of scale and integrate multiple economies that are independent of each other in the existing power industry, 一元电力 will entrust and authorize Share Co., Ltd., a blockchain company located in Seychelle, Blockchain technology company located in Seychelles, importing the token model of RAM blockchain in frontier technology. This model uses electricity settlement token and electricity token in economic cycles, achieves painless transfer of value between individual entities in the system, and ensures energy economic system can be smoothly coordinated.

Based on blockchain technology, 一元電力 will issue a dual-track token economy model:

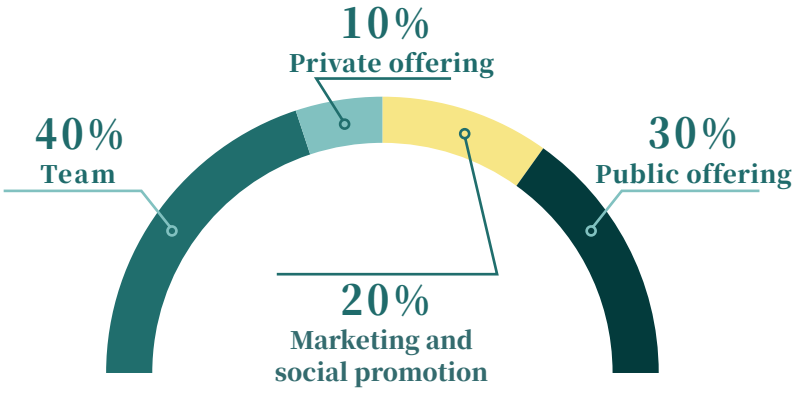
Electricity production incentive token: YYE Token; code: YYE

Electricity settlement token: YY Token; code: YY

In the initial stage, 一元電力 will introduce dual-track token system into consumer charging station construction and payment system. In the middle stage, this system will create an efficient self-circulating economy, and liberate the upstream power market through power facility crowd-funding, until the distributed power grid is formed later, which will structurally change the power ecosystem.

Introduction to Token Equities

7.2



YYE token –
electricity production incentive token

Total issuance: 3 billion
Issue Specification: ERC20
Token distribution ratio: as shown below

YY token –
electricity settlement token

Total issuance: unlimited
Issuing price:
close to 0.1 degree electricity market price
Issue Specification: Iota

7.2.1 YYE Token

YYE is the "electricity production incentive" token (power mining production tool) based on Ethereum’s ERC 20 standards, and it is created for crowdfunding.

YYE Token Icon:

Early stage: use DeFi concept to stake on different consumer infrastructure construction plans, and later gain proportioned eligibility of profit from charging stations in a fixed period of time (1 quarter or half a year), in the form of YY
Later stage: act as capital invested in energy infrastructure, and gain proportioned eligibility of profit from power generation, in the form of YY. YY in different time periods can be regarded as the unit of electricity price, and can be exchanged in the market according to demand

DeFi mining concept – provide liquid capital and obtain shared profit from electricity

After users obtain YYE tokens through private offering, crowd-funding, exchanges and other channels, they can choose to stake them on various infrastructure investment projects initiated by 一元電力 's platform. In the early stage, the spread of charging stations will be the main underlying asset.

Learning from DeFi's model of providing liquidity in exchange for mining profits, investors can leverage YYE to provide working capital (liquidity) of a certain period for infrastructure projects. They can hence obtain a certain percentage (80%by default) of electricity profit in that fixed period of time and receive all YYE staked after the investment project expires.

It is worth noting that as the distribution process of charging stations becomes more and more complete, and its scale and market share increases , the average profitability of each charging station will also be greatly increased due to scale effect.

When the distribution of consumer infrastructure reaches the profitable scale, 一元電力 will not only open up proof-of-stake mining, but also power plants as underlying assets for investment. YYE holders can even use YYE as power plants’ equities for proof-of-stake mining to obtain a larger amount of profit.

DAO concepts

Finally, in a economic cycle of 一元電力 , YYE can be used as the voting right for the system’s decision. Automated implementation of DAO through smart contract programs will result in decentralized power system in small communities, cities, and provinces, and even countries.

7.2.2 YY Token

YY (YY Token) is the "electricity settlement token" in our system.1 YY token can be regarded as an exchange certificate for 0.1 degree of electricity, so it can be used for payment in electricity consumption scenarios and its worth is 0.1 degree of real electricity.

How to obtain YYcoins:

- Stake or investment to gain YY from shared profit
- In-APP with RMB recharge

YY Token Icon:

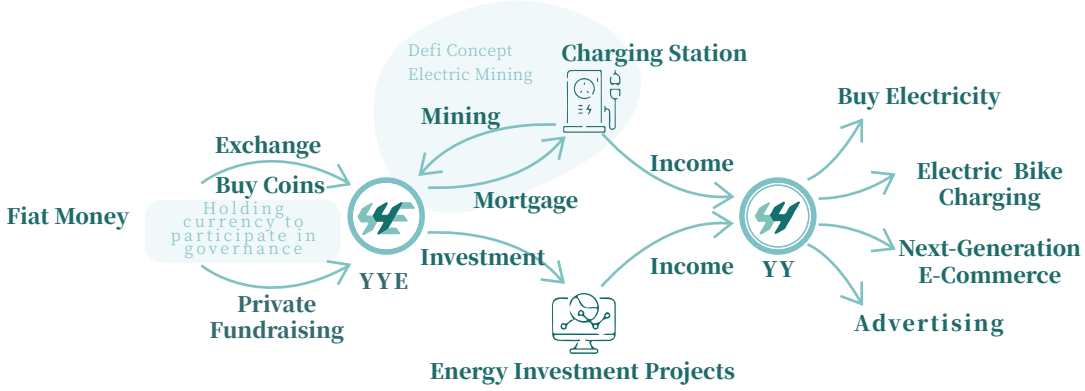
Four uses of YY:

- Pay for charging stations' fees
- Make purchases on 一元電力 's "new e-commerce"
- For third-party service providers to pay for advertising
- At a later stage, pay for electricity bills by integrating YY into the settlement system

Initially, users can use YY to pay for the charging stations' fees. Third-party service providers spend YY to purchase advertisements in charging stations.
The new model mall is expected to be launched in early 2021, reversing the inefficient and high-cost model of traditional e-commerce where consumers know their needs and select products. Our new e-commerce will combine consumer charging facilities and sutomobile networks' s IoT technology to proactively monitor and analyze real-time electric current and car conditions, so as to predict customers' needs better than themselves; it will also make timely broadcast to inform users accurate solutions tailored to their needs, and use predictive models to estimate the precise demand of the overall market each quarter to achieve purchase savings.
In the middle and later stages, when the renewable energy production infrastructure (power plants, solar panels) is built, large companies can also use YYE to invest large-scale in green power generating facilities. In addition to being a cheaper way to obtain electricity currency use it to purchase electricity, this is equivalent to the company's timeous preparation to gain the right to use renewable energy.

Token Cycle

In general, YYE and YY tokens represent "capital raising tools" and "power settlement tokens" respectively, allowing the system to integrate various parts in the originally spread-out industry and to link up the value. As a result, energy self-circulating economy system will be built.



Token Economic Model

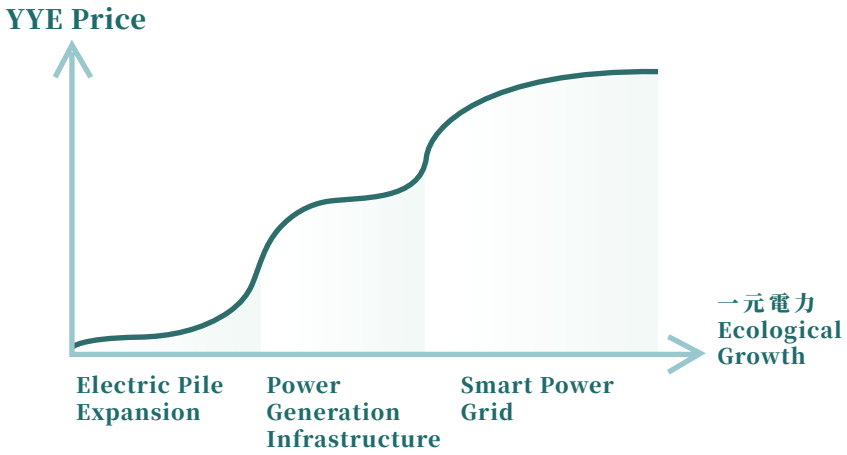
Self-Circulating Economy

7.3.1 Value Increment Model

YYE's proof-of-stake mechanism stems from cryptocurrency market's decentralized finance and its liquid stake mechanism. For 一元電力 , selling YYE tokens is to exchange future revenue for early investment in order to accelerate the expansion of charging stations. This is also a necessary factor for the electric cars' charging market to build up economies of scale, forming a positive cycle between YYE buyers and 一元電力 .

At the same time, YYE and charging stations are used for the expansion of the power grid in early stages, and the characterization of large-scale power infrastructure investment in the middle and later stages. Its value will be captured by the value network 一元電力 ; at the same time, YYE also symbolizes governance of一元電力 over the power ecosystem. In the final stages, when building decentralized energy system, 一元電力 have the voting right on network changes.

7.3



For YYE investors, using YYE is equivalent to purchasing profit of charging stations over a specific period of time, and the profit can be exchanged into money at any time; for 一元電力 , accommodating more investors means getting more funds and accelerating infrastructure construction. This makes the expected price and transaction demand of YYE tokens higher, which means more capital inflows and boosts the growth of the power network.

7.3.2. YYE and YY’s Cycle Economy

In the initial stages, YYE provide funds to accelerate economies of scale. In return, YYE holders of YYE will receive YY. After the economies of scale gradually takes place, YYE will foreseeably bring in more YY, increasing price of YYE.

Later into development, 一 元 電 力 will gradually expand YY’s payment functions and electricity settlement nodes, and raise YY’s intrinsic value, so that YY can be a payment medium in the ecosystem. When users can pay for more goods in YY, the price of YYE also benefits from the rise in YY’s intrinsic value.

Investors receive YY by investing in YYE, while YYE funds the construction of the ecosystem, giving YYE holders more YY. YY’s added value also increases when the ecosystem matures gradually, which attracts more people to invest in YYE and participate in the green power economy of 一元電力. More capital investment flows into the construction of this economy,and circulates, forming a positive cycle of YYE and YY token economy.

2018

Set up a team, preparation, research and development

2018 Launched project and , began to develop consumer charging stations

2019 Q1 Completed R&D of consumer infrastructure and set up trial spots

2019 Q3 Completed Phase I infrastructure layout and began trial commercialization

2020 Q1 Developed blockchain, Internet of Things and 5G integrated system, tested AI power grid system model and expanded to South China for official partnerships

2020

Initial construction, rapid expansion period

2020 Q2 Reached 3,000 charging stations and formed a strategic partnership with lithium battery suppliers

2020 Q3 Expanded to North China for official partnerships and formed a strategic partnership with the top 3 Chinese asset management firms

2020 Q4 Expanded to South-west China for official partnerships and kickstarted the first IPO of tokens

2021 Q1 Reach 10,000 charging stations, test power generating facilities and start crowd-funding model

2021

Stable expansion period, international strategic partners

2021 Q2 South China, North China energy exchange field layout, northwest China charging pile field layout

2021 Q3 Launch investments in power generating facilities, trial charging stations in South East Asia, and expand settlement token’s applications

2022 Unite upstream, midstream and downstream energy sectors and develop economies of scale in South East Asia

2023 Launch energy derivatives trading market

Our Team

Co-Founder, Bob Jiao

- One of the first advocates of energy exchange stations across Taiwan Strait, and has invested in over 30 new energy related firms such as Sincerest Capital, ezSWAP, GCE, etc.
- Founded High-Top Group in 2004, focusing mainly on electronic components, and its clients include Kingston, Samsung, Toshiba and Sandisk
- Dedicated himself to electric bicycles in 2013, and became one of the rule makers in the Chinese market
- Founded 一元電力 in China in 2018, aiming to build a new energy scene

Board Member and Co-Founder, Jack Lin

- Currently MSCI's Head of Client Coverage Asia Pacific, and the only member of the executive commitee of Chinese descent
- Former Head of Asia Pacific and Co-Head of International Business in Janus Capital Group
- Worked at Franklin Templeton Investments for over 10 years and oversaw Franklin Templeton's JV in China, Franklin Templeton Sealand Fund Management Company as its first CEO
- PHD from UCLA School of Law and MBA from UCLA Anderson School of Management

Co-Founder, Paul Roberts

- Compal Electronics Senior Director, Investment Planning and Management Office – a global top 500 firm with annual revenue of over 30 billion USD – and in charge of strategic investments and managing lead investment projects
- In charge of multiple reinvestment businesses under Compal, contributing to annual combined revenue of 1.2 billion USD and annual profit of 80 million USD
- Acer Group, ID SoftCapital Inc. Managing Partner, responsible for investments, mergers and acquisitions and business transformation; participated in the transformation of Eslite group and HK Golden Harvest Group

COO, Jerry Peng

- Former Greater China CEO of Eng Electric Company with 23 years of experience in electronics industries
- Responsible for 一 元 電 力 's charging station operations and strategic partnerships across China

Technical Consultant, Lman Chu

- CEO of BiiLabs, Taiwan’s renowned blockchain solution start up
- Invited to UN’s ID2020 to offer blockchain solutions for its Peacekeeping Force
- Over 20 years of cross-industry experience in areas inclurding Internet, embedded system and special cell site
- Founded Himelight in 2015, focusing on nurturing tech talents and open innovation for enterprises

Senior Technical Consultant, Kuen Chen

- Chairman of Yantai Tuling Intelligent Information Technology Co.,Ltd..
- Responsible for developing big data platform for 一元電力 's charging stations and support on smart software R&D

Senior Technical Consultant, Rene Villeneuve

- More than 25 years of experience in software design and composition, providing technical services to organizations such as European cyber security networks and the European Nation Commission.
- Has been actively participating in network security and the final cooperation with ENCS, European Nation Commission, and other organizations in the past 12 years. Meanwhile, works as a senior security data scientist and hacker, having extensive knowledge and experience in ground-chain infrastructure, smart contracts, network design, VOIP and VPN.

Blockchain architect, Ishizaki Takahiro

- Held the core development role of financial software in the listed companies RS Software and Siemens.
- Proficient in the use and principles of large-scale distributed computing platforms such as Elasticsearch, HadoopStorm, Spark, and Impala, and having in-depth research on blockchain decentralized storage and distributed algorithm technology.

一元电力
YI YUAN CHARGE

Open Market White Book