www.karvuon.com



WHITE PAPER

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INTRODUCTION

The landscape of today's energy sector is changing significantly due to technological progress and innovation. Current energy systems are undergoing deep changes and shifting their business logic. This will affect numerous aspects of our lives.

Rapid growth, speed, and continuation of technological advancement are changing the mechanisms of functionality and maintenance by involving technologies like blockchain, artificial intelligence and machine learning, progressive mining facilities, and more. With the primary shift involving renewables such as solar and wind generation, an expected increase by a factor of 60 and 13, respectively, from 2015 to 2050¹ is opening a vast landscape of opportunity within the energy sector.

In line with the current state of the industry, Karvuon is planning to produce as much energy as necessary to fulfill the ever-growing appetite for its consumption, bringing energy to blockchain and other industries. With the rapid growth of blockchain, the technology itself is advancing at an alarming rate. Even with massive advancement and adaptation, the industry requires fuel to run on: energy. Because the energy sector is already under a heavy burden from other industries, blockchain industry a new energy source that is cheap, feasible, and sustainable. This has resulted in the need for a consistent energy source. For this reason, Karvuon has positioned Mongolia as a land-rich country capable of producing abundant energy from its resources.

Vision

We are striving to become a global energy leader by building wind farms, solar farms, power plants, and a blockchain data center. By producing energy on a large scale, we envision supporting an industrial park to house processing and data centers as well as crypto mining farms to establish a highly profitable company for our shareholders/token holders.

¹

https://www.mckinsey.com/~/media/McKinsey/Industries/0il%20and%20Gas/Our%20Insights/Global%20Energy%20Perspective%202019/McKinsey-Energy-Insights-Global-Energy-Perspective-2019_Reference-Case-Summary.ashx

Mission and Goals

Utilizing Mongolia for its natural resources, land, and over 300 sunny days per year, Karvuon, LLC is planning to construct a wide variety of energy-producing plants where renewable sources will be the target.

With a JORC-confirmed 327 million tons of coal deposits, Karvuon LLC plans to start with this traditional energy source in order to construct and operate an industrial park in central Mongolia.

Our goal includes:

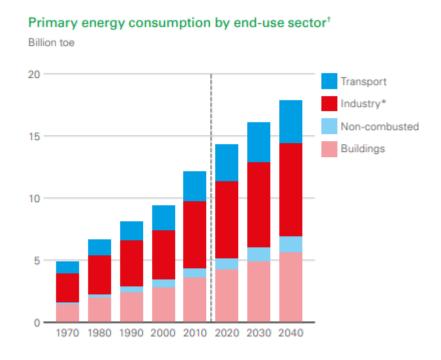
- A coal-powered 200MW power plant
- A solar farm
- A wind farm
- A crypto mining facility with a capacity of up to 500,000 mining machines.

Karvuon is launching an initial exchange offering to attract investments for initial platform development, with the distribution of Karvuon utility tokens that represent tokenized energy produced by Karvuon facilities. Further, it will be possible to exchange them for security tokens backed up by platform-generated revenues. Our STO campaign will be launched on our platform to provide security token holders with the opportunity to earn payments, which will be distributed every reportable period after official financial reports.

MARKET OPPORTUNITY

Global Energy Demand

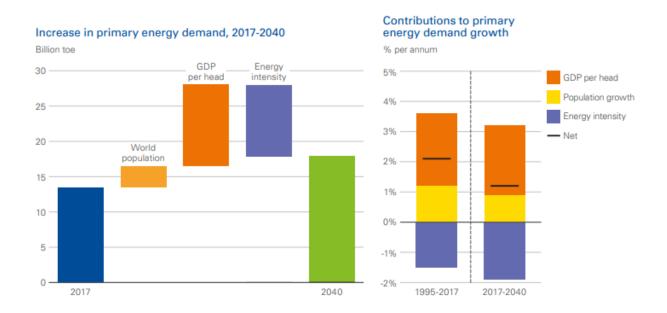
According to BP Energy Outlook, the growth in global energy demand is broadbased across all primary sectors of the global economy. A range of trends in energy use and consumption bears heavily on the projected energy transition.



Expansion in global output and prosperity is driving massive growth in global energy demand. Energy consumption is increasing at the rate of around a third over past projections. As is the case with GDP growth, the vast majority of this increase stems from heightened prosperity, as billions of people move from low to middle income. This allows them to substantially increase their energy consumption per head.

Considering the fact that overall growth in global demand for energy is materially offset by a decline in energy intensity (energy used per GDP unit), the world is quickly learning to produce more with less.

Global energy is growing at an average rate of 1.2% p.a., down from over 2% p.a. in the previous 20 years or so. This weaker growth reflects both slower population growth and faster improvements in energy intensity²:



Karvuon's goals in terms of energy-source establishment meet the abovementioned conditions. Our renewable technology, based upon solar and wind resources, will be utilized to guarantee industry improvements and decrease carbon emissions. Though our first goal is to supply the blockchain mining industry, over time, we will be able to produce enough energy to support other industries in need.

Energy Demand for Cryptocurrency Mining

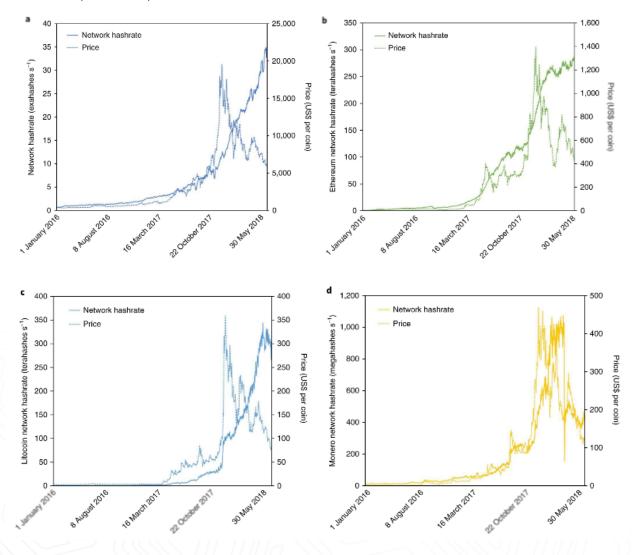
With a high number of existing and upcoming cryptocurrencies serving as the technological backbone for the blockchain ledger, there exists a computationally-intensive requirement for huge energy input in order to support the process of block addition and crypto mining. The total market capital for 1,325 different digital assets was valued at over \$ 350 billion U.S. in 2017. This increase in cryptocurrency mining has been attributed to rising adoption of cryptocurrency and total market capital in digital assets for long-term profits.

According to a *Nature Sustainability* analysis, From January 1, 2016 to June 30, 2018, it is estimated that mining Bitcoin, Ethereum, Litecoin, and Monero consumed an

² https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf

average of 17, 7, 7 and 14MJ to generate \$1 U.S., respectively. Comparatively, conventional mining of aluminium, copper, gold, platinum, and rare earth oxides consumed 122, 4, 5, 7 and 9MJ to generate \$1 U.S., respectively, indicating that with the exception of aluminium, crypto mining consumed more energy than mineral mining in the production of equivalent market value³.

Figure X. Blockchain hash rates and coin exchange prices in US dollars for Bitcoin, Ethereum, Litecoin, and Monero.



³ https://www.nature.com/articles/s41893-018-0152-

^{7.}epdf?referrer_access_token=4WFhbLVH943fe3mcf8oZANRgN0jAjWel9jnR3ZoTv0NdJEcpPQZqiP9V_5sRM6OFeEt1maRlkYa2rAMRc-x1aVbfFmAZSely1BUabgBXZ5z6UQfH0t8xSV-r-npyxYVvgn4cGz5vnYe41OneS4y9iDEq9qg_P_yvZnh3zShMKtDW2Q4oj7ea5KOxnmJf-j_pUXVLuKqBdId1DeooWHyXBGTsaKAeh50jbelu7OUy1zXlkZZVtyhwK389Tt_6m7EusXgJedPs47tRpklbfG1lrE7zSz3Bqp6kqnD7z10SVdY%3D&tr acking_referrer=blogs.discovermagazine.com

In the data above, hash rates of Bitcoin (a), Ethereum (b), Litecoin (c) and Monero (d) indicate the intensity of mining activity.

A new study published in *Joule "The first on the subject to undergo the rigors of peer review"* argues that, globally, Bitcoin mining consumes at least as much electricity in a year as all of Ireland (about 24 TWh). Worse still, it contends that the energy use is doubling every six months, and could reach the annual consumption of the Czech Republic (about 67 TWh), about 0.3% of the world's electricity consumption.

While market prices of coins are quite volatile, network hash rates for three of the four cryptocurrencies have trended consistently upward, suggesting that energy requirements will continue to increase. This will result in the need for sustainable energy source that Karvuon aims to provide.

INDUSTRY PROBLEMS AND OUR SOLUTIONS

Today's problems of the energy sector are influenced by challenges like assurances that energy supply will keep up with demand and the dual threats of climate change and global urbanization.

Making Sure Energy Supply Keeps Up With Demand

This challenge revolves around the issue of investing the right level of financing, resources, and effort to maintain and control the cost of final energy output.

The International Energy Agency estimates that 1.4% of the global GDP will have to be invested in the energy system between 2010 and 2035, or \$33 trillion over 25 years. Two-thirds of these investments will need to be in emerging and developing economies to satisfy the projected 2% annual growth in primary energy needs, while the remaining third will replace outdated infrastructure in OECD countries⁴.

In order to solve this problem, Karvuon is seeking financing to establish a smart industrial park in the resource-rich country of Mongolia. In response to this country's potential capacity and multiple energy-supplying units, Karvuon plans to satisfy the appetite for energy consumption and fully supply not only the blockchain mining sphere, but also any industry experiencing demand.

⁴ https://yaleglobal.yale.edu/content/three-challenges-facing-electricity-sector

The Threat of Climate Change

In terms of environmental threats, the issue of emissions is one of the most crucial in energy production.

According to IEA, in order to have a 50% chance of limiting the global temperature increase to 2°C in relation to turn-of-the-century levels, global emissions will have to be reduced 50% between now and 2050. In a business-as-usual scenario, emissions would almost double by that year. The energy sector is on the front line, as two-thirds of global GHG emissions are carbon emissions linked to that sector.

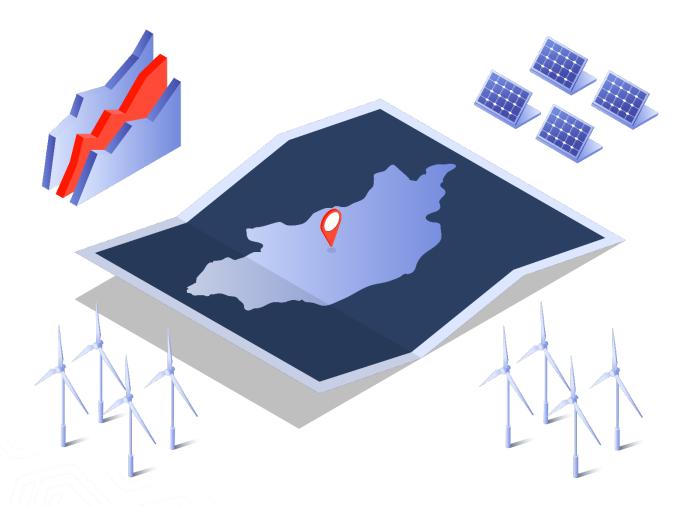
Additionally, according to *Nature Sustainability* report, estimated mining for cryptocurrencies has been responsible for 3–15 million tonnes of CO2 emissions.

Urbanization Trend

Massive urbanization in the development of newly-emerging regions has been growing exponentially. Cities account for two-thirds of global energy consumption today, and this will likely rise to three-quarters in 20 years. Cities are responsible for 70% of global energy-related CO2 emissions and a large percentage of local air pollution⁴.

Though our energy-generation model starts with the usage of coal, we understand that this approach cannot be used to accomplish long-term goals. Therefore, to eliminate the harmful impact of energy production, we plan to utilize renewables by establishing solar and wind farms to generate large amounts of energy through the use of the beneficial natural conditions and resources of Mongolia. Energy optimization stands as one of our key priorities in order to manage social and environmental externalities in the modern community.

WHY MONGOLIA?



Karvuon has positioned Mongolia as one of the most beneficial regions and resourcerich countries in the world. Its energy sector consists of:

Central energy system (CES)

• 5 coal-fired thermal plants (987.3 MW) connected to the Russian energy system, covering energy demand of Ulaanbaatar and 14 provinces (70% of total population).

West energy system (WES)

 Connected to the Russian energy system and Durgun hydro power plant (12 MW); covers the energy demand of 3 provinces.

East energy system (EES)

• Coal-fired thermal power plant covering the energy demands of 2 provinces.

Altai-Uliastai energy system (AUES)

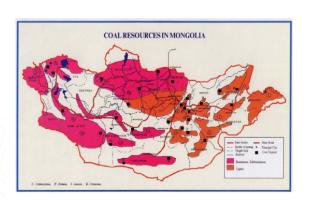
• 6 hydro power plants (14 MW) and diesel generators covering the energy demand of 2 provinces.

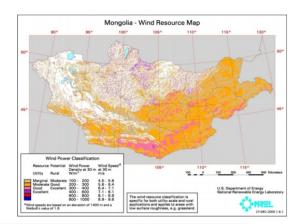
South region

 2 coal-fired thermal plants (27 MW) and connected to the Chinese power system and covering the energy demands of the Oyutolgoi copper mine deposit⁵.

Preliminary, geologists estimate that the geological reserves of coal in Mongolia account for more than 160 billion tons.

Mongolia has the potential to be a major wind-power producer. It has enormous wind-power resources equivalent to 1,100 GW of total wind electric potential.



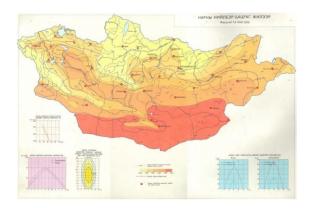


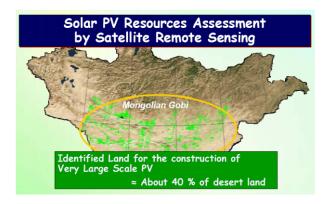
The Plaza, Seoul, Republic of Korea, 17 December 2015

In terms of energy resources in Mongolia, the annual average amount of solar energy is 1,400 kWh/m/y, with solar intensity of 4.3-4.7 kWh/m per day.

There are about 300-330 sunny days per year, with average sunlight duration of 2,250-3,300 hours available in most territories of Mongolia.

⁵ https://www.unescap.org/sites/default/files/Session%203-4%20Batbayar%20Chadraa.pdf

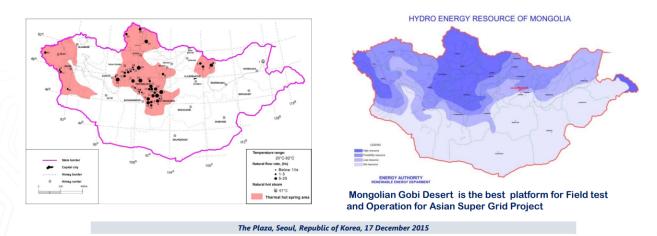




The Plaza, Seoul, Republic of Korea, 17 December 2015

Mongolian geothermal and hydro resources include over 40 indications of geothermal manifestations, such as the biggest springs (Tsenkher, Khujirt, Taragt, and Shargaljuut) which are located in the Khangai region and may be used for energy-production purposes.

In addition, there are 3,800 small and large streams and rivers in Mongolia. Available power could reach 6417.7 megawatts, which will deliver 56.2 billion kWh of electric energy in a year⁶.



Karvuon's goal is to use Mongolian resources to provide enough sustainable energy for all needs. We will be working in accordance with Mongolian energy policies for the next 15 years.

⁶ https://www.unescap.org/sites/default/files/Session%203-4%20Batbayar%20Chadraa.pdf

VALUE PROPOSITION

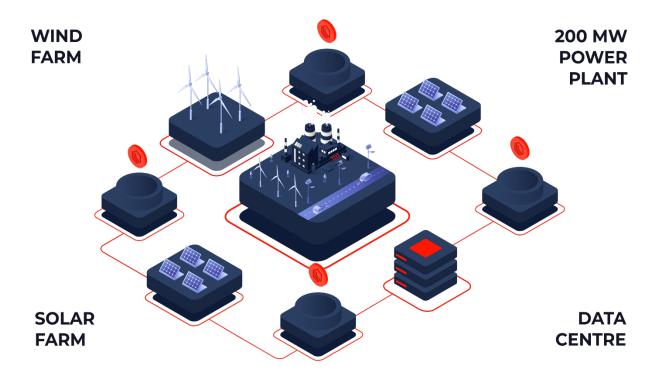
Our value is in bringing substantial improvements in the mining sector by implementing low computational costs and better power alternatives. The venture is backed up by a physical asset in Mongolia where 327 million tons confirmed coal deposit is completely owned by the Karvuon LLC.

As an initial step of the project development, the Karvuon LLC is starting coal mining and is establishing the 200MW power plant for producing the energy that will power the Karvuon Blockchain Data Center, which will include mining facilities with up to 500 000 mining machines.

Depending on the environmental problems and new trends in the energy sector, as the next stage of the project development, Karvuon LLC is going to construct the Wind Farm and Solar Farm with a total capacity of 100 MW.

Considering that the Mongolian region is positioned as the best match for renewable energy production (being one of the least densely populated countries in the world after Greenland), we aim to provide an opportunity for the company clients to use cheap energy resources for the crypto mining sphere, or rent the company's mining capabilities to support their blockchain systems without harm to the environment.

Karvuon LLC will build and operate an energy industrial park in Central Mongolia. We are going to construct a power plant with a capacity of 200 MW and an annual energy generation of 1 752 000 MWh and solar and wind farms with a capacity of 100MW with an annual energy generation of 876 000 MWh. Karvuon's Industrial Park will create over 1,000 employment opportunities and provide the local economy with high tax revenues.



In line with expectations, Karvuon LLC is going to partner with the solar power development project Solar IIch, which will construct a captive solar farm in Khanbogd, South Gobi Province.

Solar IIch will build and operate:

- 1. A 50MW solar photovoltaic (PV) farm with ancillary facilities on 100 hectares of land in the Uurtiin Khoshuu area (6km southeast of Khanbogd soum)
- 2. A 2.4 kilometer, 110 kilovolt (kV) double-circuit transmission line to an existing 220/110/35 kV substation near the Oyu Tolgoi Project, Mongolia's largest copper and gold mine ("Oyu Tolgoi").

Our value lies in the goal of establishing a reliable energy source that will provide a new opportunity for clean energy production and later connect to the Mongolian electrical grid for energy-sharing.

Karvuon Smart Grid (KSG)

The Karvuon Smart Grid Supervisory Control and Monitoring System will become the main energy-control platform utilizing blockchain technology in areas that do not currently have a central control system. The platform will monitor electricity from production to transmission to distribution to end-users. It is important for energy

producers and end-users to understand the production and consumption of energy right down to the smallest detail. Blockchain technology will be implemented to manage all transactions, verification of transactions, and smart contracts for executing deals between parties.

The Karvuon Smart Grid is an integrated solution system to be developed at Karvuon, LLC. It will act as the main control panel for all participants in the grid.

The system aims to meet the business objectives of both major and minor players of energy production and consumer demand by offering a smart, cost-effective solution.

To producers and prosumers, the system offers:

- Cost-effective energy distribution
- Reduced operational costs; improved employee safety
- Competitive tariff and increased revenue
- Greater opportunities for clean energy suppliers
- Higher customer satisfaction and more.

To consumers system offers:

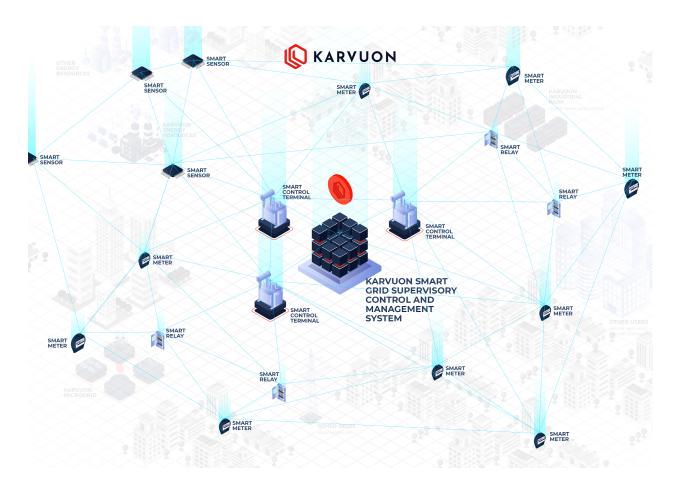
- Effective energy consumption and reduced energy cost
- Reliable, independent power supply (No blackout, No surge)
- Better customer service with accurate billing

Components of KSG

At the highest architectural layer, KSG consists of the following essential components:

- Karvuon Smart Meter (KSM) An electronic device that measures the consumption of electric energy and communicates the information to a nearby control unit on a time-sensitive basis.
- Karvuon Smart Relay Control Unit (KSR) Microprocessor-based smart relays. KSR's main functions are to control connected smart meters and transfer information from/to control terminal units.

- Smart Control Terminal Units Small control stations that collect and transfer data from relay control units to/from the SCADA station.
- Karvuon Smart Grid Supervisory Control and Management System (KSG-SCMS). At the heart of our grid, a KSG-SCMS system monitors, controls, and manages the overall operation of the grid. KSG-SCMS is a system designed and developed by our own engineers with inter-operative software modules.
- SCADA (Supervisory Control and Data Acquisition) Software for collecting and transmitting grid data and sending control signals to other components of the system.
- EMS (Energy Management System) Receives data from SCADA and performs functions of forecasting, monitoring, measuring, and control of both energy generation and energy consumption of reliable and stable operation of the smart grid.
- BCIS (Billing and Customer Information System) Software that controls and manages all billing and payment-related functions.
- SGAMS (Smart Grid Asset Management System)



Features of KSG system

In addition to the main components of the smart grid, our system will have the following features:

- Karvuon smart meters and relay control units are compliant with the IEC
 62056 standard (data exchange for meter reading, tariff and load control).
- On the grid, all software systems, including SCADA, follow the IEC 61850 standard.
- SCADA can communicate with other devices that implement Modbus RTU, RP-570, Profibus, or Conitel protocols. These are popular vendor-specific SCADA protocols. Implementation of various communication protocols in SCADA along with IEC standards enables our KSG to integrate other energy grids without hassle.

 At the core of the energy management system, a machine-learning algorithm works to levitate efficient forecasting of energy generation and consumption.

Main Issues in KSG

- As more individual suppliers and other grids want to connect to KSG, a unified medium of exchange is required for the payment system.
- With thousands (maybe millions) of smart devices connected to the grid, physical and cybersecurity become major issues.
- As the grid expands, more computational power is required for data processing.

Solution - Blockchain

In order to address the main issues with KSG, a blockchain system will be implemented.

- Blockchain offers unified, secure payment solutions.
- With so many smart devices already connected to the KSG network, implementing blockchain technology on the existing KSG infrastructure comes at minimal cost.
- With blockchain, hacking of smart meters and other physical devices becomes impossible.

SCADA System



Karvuon LLC is developing valuable, innovative services that provide full transparency of processes, cost reduction, and convenience.

Considering that the Karvuon environment features energy resource production facilities, it is important to manage and monitor them in a real-time manner. For these needs, we are designing the Karvuon SCADA (Supervisory Control And Data Acquisition) system.

This system will check all the operational activities from energy production facilities, such as:

- solar farms
- wind farms
- power plants

This will provide system operators with real-time data for energy-leak prevention and quick reaction time on any production issues.

The Karvuon Blockchain Data Center will also be connected to the SCADA system for efficient operations management and full control of all activities.

The Karvuon SCADA system is a software application that will be used for process control from local and remote locations, information-gathering from multiple smart devices, and storage in appropriate databases.

As an additional feature, Karvuon, LLC is going to deploy a private blockchain environment utilizing Hyperledger Fabric. This will be connected to the SCADA software. The solution allows us to design a secure blockchain environment with PBFT consensus, which provides the ability to reach an agreement on the current network state when multiple parties have the opportunity to take part in the consensus process. Our private blockchain solution will be developed after the STO campaign, and will be described in an additional document which will be announced on our website in full detail after the IEO campaign.

KARVUON BUSINESS MODEL DESCRIPTION

Token-Generation Event and the Return on Investments Process

Karvuon, LLC is going to launch a hybrid model of token generation event with an initial exchange that offers deployment of Karvuon utility tokens plus a security-token offering with Karvuon security tokens on the Ethereum public network. Karvuon utility tokens will provide token holders with the ability to purchase security tokens, and Karvuon security tokens will provide token holders the opportunity to receive payments from the company's revenues every reportable period.

Development of Energy-Producing Facilities (Wind Farm, Solar Farm, and Power Plant) for Revenue/Profit Generation

After the Token Generation Event, funds will be invested in energy-producing facilities that will generate future Karvuon LLC revenues and lead payments to the security token holders.

Blockchain Data Center Development - Blockchain IaaS and/or Mining Facilities

Karvuon LLC is going to develop a Blockchain Data Center for an additional revenue stream. It will include up to 500,000 mining facilities powered by the power plant as well as solar and wind farms.

The Hybrid Blockchain Solution: Sidechain laaS On-Demand

Karvuon, LLC customers have the unique opportunity of leasing Karvuon mining facilities and bandwidth to launch their side chains. The company's mining facilities will provide support for operational sidechain activities.

REVENUE GENERATION STREAMS

The Karvuon, LLC business model is designed with several revenue streams:

Coal Mining

As Karvuon, LLC owns a JORC-confirmed 327 million tons of coal deposits, our initial development stage will be coal mining. This will serve as our initial revenue stream, and will begin income generation after the end of the crowdfunding campaign. It will also provide security token holders with initial payments.

Energy Resource Production

In our next development stage, we are going to construct a coal-powered plant and construct solar and wind farms. Mongolia has favorable conditions for renewable energy production. All energy produced by Karvuon facilities will be available for purchase by consumers and resellers, and will be used to support the Karvuon Blockchain Data Center.

Blockchain Data Center

We will be constructing a Blockchain Data Center with 500,000 mining facilities. It will be supported by energy produced by Karvuon production facilities. With this Data Center, customers will have the ability to lease massive hashing power for crypto mining, design their own networks with the deployed node support, or just rent a mining space for their own mining facilities using cheap Karvuon energy resources.

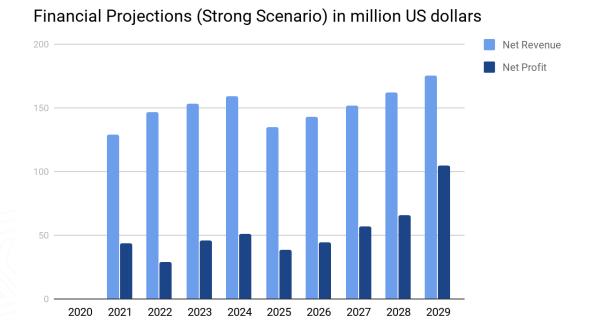
FINANCIAL PROJECTIONS

According to the Karvuon, LLC business model and investment projections, we are seeking investments to construct, install, and operate coal mining facilities, a coal power plant, a solar power plant, and a wind power plant.

According to the projected revenue-generation model, we plan to start payouts from:

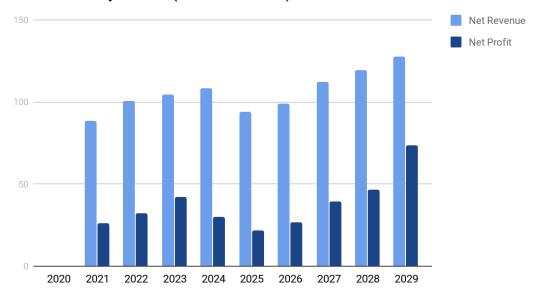
- 2022, in the amount of 15% according to the strongest scenario
- 2024, in the amount of 9% according to the base scenario

According to the strong scenario, we assume the following profits:



According to the base scenario, we assume the following profits:





According to our business model, we are planning to redeem our distributed equities. This approach will allow payouts to our investors during the first 8-9 years, with an ROI of 145%-205% (depending on the scenario).

*Please note that these are preliminary assumptions, and numbers may vary. You can always contact Karvuon to find out more. In addition, we'll keep our community updated via our social media networks.

BLOCKCHAIN ARCHITECTURE DESIGN

Nowadays, the crypto market is rapidly increasing in popularity, with a growing number of projects implementing blockchain technology in their business models. A number of platforms, such as Ethereum, EOS, NEM, Waves, etc., are providing opportunities for projects to launch token generation events.

Karvuon has chosen a hybrid model for our token-generation event, starting with an initial exchange offering (the details of which you can find in the <u>tokenomics</u> section). We will proceed with a security token offering to allow our investors to receive payments.

For both campaigns, Karvuon, LLC has chosen the Ethereum platform, as it offers a number of advantages over its competitors:

- Market acceptance Ethereum is the most popular platform for crowdfunding campaigns.
- Easy investment process Most crypto wallets are located on the Ethereum platform. This makes it much easier for users to get involved in token sale events.
- Wide ERC20 token standard usage This is currently the most popular token standard in the Blockchain environment because numerous crypto wallets support it.

Ethereum is a permissionless blockchain type, meaning that anyone in the world with an internet connection can take part in the consensus process. The Ethereum Public Network uses the Proof-of-Work type of consensus supported by a large number of nodes all over the globe. This provides high system security and stability.

We will be distributing ERC20 security tokens during the Security Token Offering. The main idea behind it is that all security tokens represent an opportunity for token holders to receive payments from the company's generated cash flow. The payment event will occur quarterly, and will depend on the company's financial audit statement.

Karvuon LLC ERC20 security tokens can be used for P2P transaction processing between users in the public blockchain environment, and are tradable on exchanges to ensure future security-token listings.

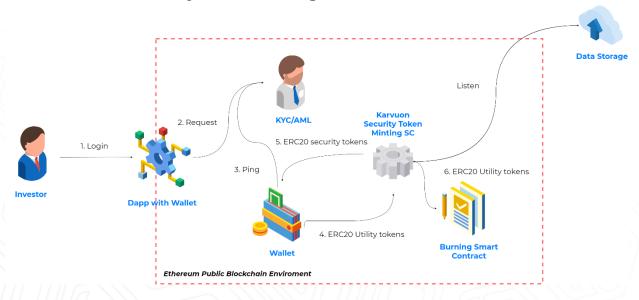
The key features of the Ethereum Public Blockchain include:

- A highly secured platform with thousands of public nodes serving transaction execution. This type of solution avoids the risk of the 51% attack, which is extremely important for the sustained work of the network and security of the user funds.
- Ethereum wallets are adopted at a high rate by the crypto community, which provides the most comfortable and convenient way to gather funds during crowdfunding campaigns⁷.
- A strong development and support team.
- The opportunity to create ERC20 tokens, which are easy to create and easily adopted by crypto exchanges for their listings.

The overall STO Event is presented below:

Figure X. Description of the Security Token Offering

Karvuon LLC - Security Token Offering



⁷ https://blockgeeks.com/how-to-setup-an-ethereum-wallet-and-buy-a-custom-token-a-guide-for-coinbase-users/

Here is a step-by-step description of our operational workflow:

- 1. The user enters the Karvuon, LLC STO cabinet for security-token purchase.
- 2. The user goes through KYC/AML verification.
- 3. After successfully passing the verification process, the user can take part in the Karvuon, LLC STO campaign, with the ability to exchange Karvuon ERC20 utility tokens for Karvuon ERC20 security tokens.
- 4. The user sends the appropriate amount of Karvuon utility tokens from his/her wallet to the Karvuon Security Token Minting SC.
- 5. The Karvuon Security Token Minting SC receives utility tokens and mints the appropriate amount of Karvuon security tokens into the user's wallet on the Ethereum Public Network according to a 50:1 ratio.
- 6. The user receives security tokens, and Karvuon Security Token Minting SC sends the received utility to the burning SC.
- 7. The burning SC burns the received utility tokens.
- 8. All operational activities are stored in off-chain data storage and on the blockchain as a hash value.

The Karvuon, LLC STO will feature:

- A smart contract with which to issue ERC20 security tokens:
 - o A predefined token supply for the STO Campaign
 - AirDrop functionality
 - o A freeze function for lock-up tokens after the STO campaign.
- The number of tokens purchased during the Security Token Offering campaign will be equal to the appropriate number of investments
- All minted ERC20 tokens will be a security token type that will provide the opportunity for payments to token holders from future Karvuon LLC cash flow.

HOLDER PAYMENT PROCESS

Karvuon, LLC security tokens that are distributed during the STO campaign will provide the opportunity for investors to receive payments from the company's future cash flow. These will be generated in a few ways:

- Coal mining
- Selling produced energy to the customers
- Cryptocurrency mining
- Leasing mining facilities and mining bandwidth.

The payment process will occur after financial statement audits, and will be ensured by the Karvuon, LLC smart contract deployed on the Ethereum Public Blockchain. This approach will provide full transparency of earned payments to token holders.

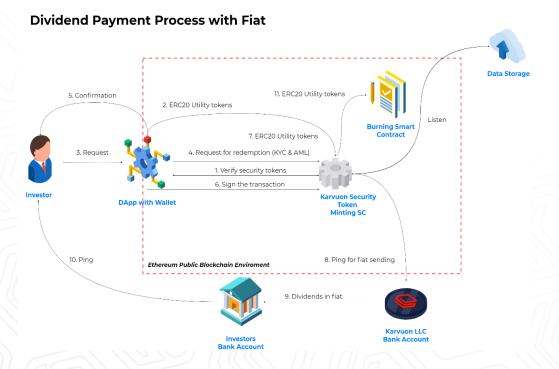
For the customer comfort and convenience, the payment process is utilized by the ERC20 utility token deployed on the Ethereum Public Blockchain. This means that ERC20 utility tokens will have no value in the external environment, and will be used only in the internal environment. In this case, tokens can't be used for P2P transactions, and can be sent only to the Karvuon platform for redemption through further burning. They will have a fixed price of \$1.

This approach will solve the problem of high costs for servicing and administration of payment distribution activities.

The payment will be equal to the amount of the security tokens allocated to the token holders' wallets, and will occur every reportable period.

After receiving a payment in the ERC20 utility tokens, the token holder has the opportunity to send a request to the Karvuon platform for redemption. In this case, the token holder passes the KYC/AML verification procedure. After successfully passing the verification process, the token holder has the opportunity to exchange ERC20 utility tokens via cryptocurrency or fiat.

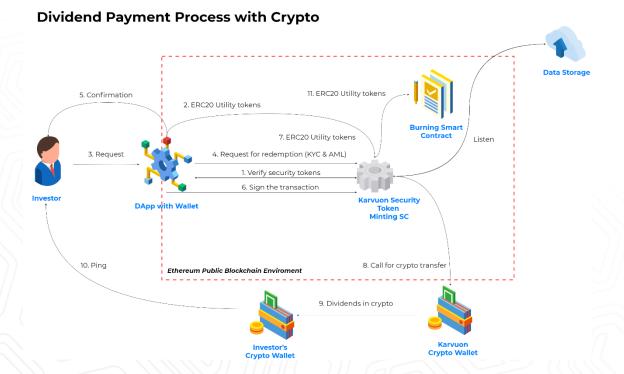
Figure X. Description of the Holder Payment Process with Fiat



Here's a step-by-step description of the operational workflow:

- 1. The Karvuon, LLC SC listens to investors' wallets regarding number of tokens and holding period.
- 2. At the same time, the Karvuon, LLC SC listens to the Karvuon, LLC bank account and Karvuon, LLC data storage for cash flow generated by the business.
- 3. Based on this information, the Karvuon, LLC SC mints ERC20 utility tokens and sends them to investors' wallets.
- 4. When investors decide to convert payments into fiat, they need to go through KYC/AML and place an order for ERC20 utility token redemption.
- 5. Karvuon, LLC will verify all investors and ping the Karvuon, LLC Bank account to send fiat as a payment.
- 6. Karvuon LLC SC burns ERC20 utility tokens.
- 7. Investors receive confirmation from their bank account about receipt of payments.

Figure X. Description of the Dividend Payment Process with Cryptocurrency



Here's a step-by-step description of operational workflow:

- 1. The Karvuon, LLC SC listens to investors' wallets regarding number of tokens and holding period.
- 2. At the same time, the Karvuon, LLC SC listens to the Karvuon, LLC bank account and Karvuon LLC data storage regarding cash flow generated by the business.
- 3. Based on this information, the Karvuon, LLC SC mints ERC20 utility tokens and sends them to investor wallets.
- 4. When investors decide to convert payments into cryptocurrency, they need to go through KYC/AML and place an order for ERC20 utility token redemption.
- 5. Karvuon, LLC will verify the investors and ping the Karvuon, LLC external crypto wallet to send cryptocurrency as a payment.
- 6. The Karvuon, LLC SC burns ERC20 utility tokens.
- 7. Investors receive confirmation from their external crypto wallets about the payments.

KARVUON PLATFORM USE CASES

Using the Karvuon platform, the main advantage for token holders is the payment event. This will occur quarterly, according to company financial audits and depending on the number of Karvuon security tokens in their wallets backed up by Karvuon, LLC revenue. There are a few more use cases that will attract investors and the crypto community. These are described below.

Customers and resellers will have the ability to purchase cheap energy resources produced by Karvuon production facilities via Karvuon utility tokens and/or other crypto or fiat currencies.

Furthermore, according to the Karvuon, LLC business model, the company will develop a blockchain data center: Infrastructure as a Service. Karvuon, LLC owns the crypto mining devices. It can provide bandwidth for rent on demand, not only for public blockchains, but also for sidechains to simplify the process of blockchain adoption on the enterprise scale. This approach provides the opportunity to attract more users who, faced with the high cost of electricity, have little ability to place crypto mining devices.

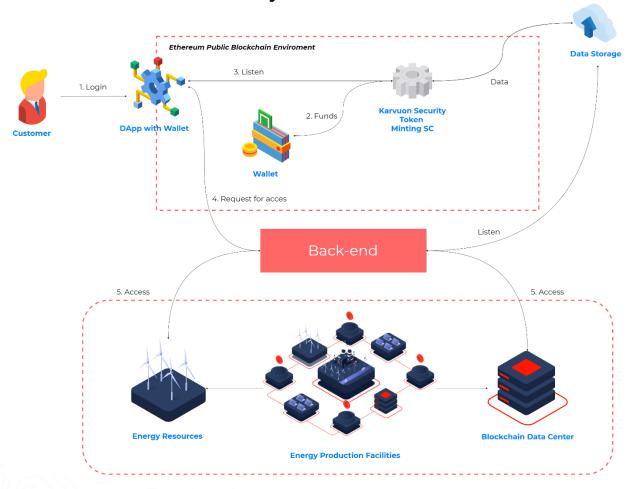
As an additional option for our customers, Karvuon, LLC will lease our crypto-mining facilities. This means that the user can rent a crypto mining device and start using it in a chosen mining pool.

In this case, crypto mining facilities are powered by cheap energy produced by the Karvuon, LLC power plant, solar farms, and wind farms. This approach provides the opportunity to attract customers with reduced prices on services with full transparency, as they will be operated by the smart contracts deployed on the Ethereum Public Blockchain.

Users will have the opportunity to make payments using Karvuon utility tokens and available cryptocurrencies or fiat currencies. Using crypto and fiat currencies requires a predefined transaction fee, while using Karvuon utility tokens as a payment unit is cost-free except for the transaction fee for the Ethereum Public Network.

Figure X. Process flow with Karvuon utility tokens

Process flow with Karvuon utility tokens



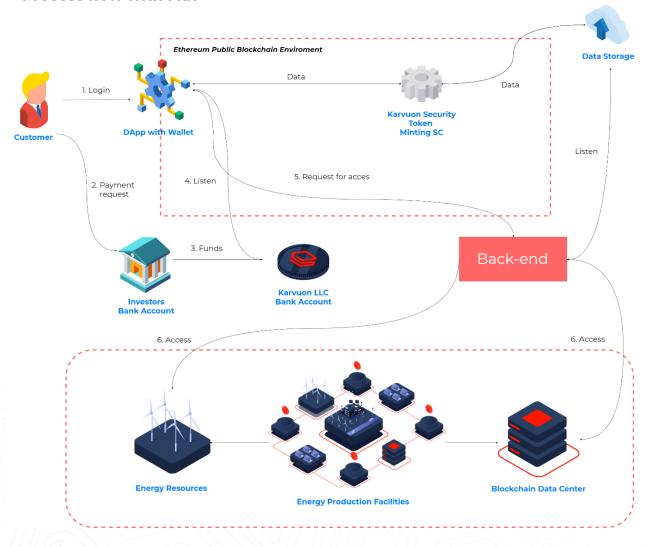
Here is a step-by-step description of the operational workflow:

- 1. The user enters the Karvuon platform via DApp and chooses an appropriate service for purchase with Karvuon utility tokens.
- 2. After receiving a payment invoice, the user enters his/her wallet with Karvuon utility tokens and sends the appropriate amount into the Karvuon Operational SC.
- 3. The Karvuon DApp checks the information regarding funds transfer and sends the request to the platform back end for user access to their chosen services.
- 4. The platform back end receives the request and grants the user access to their chosen services.

5. All information regarding operational activities is stored in off-chain data storage and on the blockchain as a hash value.

Figure X. Process Flow with Fiat

Process flow with Fiat



Here's a step-by-step description of the operational workflow:

- 6. The user enters the Karvuon platform via DApp and chooses an appropriate service for purchase with available fiat currencies.
- 7. After receiving the payment invoice, the user enters his/her bank account and sends the appropriate amount of funds to the Karvuon bank account.

- 8. The Karvuon DApp checks the information regarding funds transfer from the Karvuon bank account, and sends the request to the platform back end for user access to their chosen services.
- 9. The platform back end receives the request and grants the user access to their chosen services.
- 10. All information regarding operational activities is stored in off-chain data storage and on the blockchain as a hash value.

TOKEN ECONOMICS

Karvuon, LLC has chosen a hybrid approach for its crowdfunding campaign using the Initial Exchange Offering (IEO) and Security Token Offering (STO) campaign models.

For the IEO campaign, we are going to deploy the ERC20 utility token standard on the Ethereum Public Network. Utility token distribution will be launched on one of the top cryptocurrency exchanges.

For the STO campaign, we are going to deploy the ERC20 security token standard on the Ethereum Public Network. Security-token distribution will be launched on the Karvuon, LLC platform at the end of the IEO campaign. All security token holders will be provided with the ability to receive payments from Karvuon, LLC generated income every reportable period after official financial reports.

An additional stage of fundraising from public investors is launching an fundraising via private placement, which will be announced on our website and through official press releases.

INITIAL EXCHANGE OFFERING

According to our business model, Karvuon, LLC will launch an Initial Exchange Offering for initial attraction of investment. During the IEO campaign, we will distribute Karvuon utility tokens representing tokenized energy. Each utility token will represent 1 kW of energy produced by Karvuon, LLC facilities.

According to the U.S. Energy Information Administration, coal-fired power plants have a 53.5% capacity factor, and wind and solar farms have an average capacity factor of 32%. Karvuon LLC facilities will produce 1,217,640 MWh, or 1,217,640,000 kWh annually.

Furthermore, in one of our development stages, we are going to construct our Blockchain Data Center, which will include 500,000 mining facilities with an average mining speed of around 8,000 PH/s. Our Karvuon utility token will also represent 100,000 GH/s.

According to all of the above-mentioned numbers, the total amount of Karvuon utility tokens is 1,246,840,000, with an initial distribution price of \$0.02.

For the IEO campaign, we will deploy a token-generation smart contract on the Ethereum Public Network with the following features:

- A pre-defined number of utility tokens for the Token-Generation Event
- Airdrop feature
- Burning feature for unsold tokens

Karvuon ERC20 Utility Token

All Karvuon utility tokens will be ERC20-standard, and chosen for competitive advantages like:

- A token standard that is widely adopted by the crypto community
- Supported by a high number of crypto wallets
- Easy listing process on crypto exchanges

The ERC20 utility token will have the following features:

Payment unit

The ERC20 utility token will serve as a payment unit for Karvuon platform service purchases. This will provide users with zero fees and acceptance of the Ethereum Public Network fees (Gas) needed for transaction processing. All other payment (crypto, fiat) methods will have additional fees. This approach provides an additional incentive for token usage as well as extra liquidity.

P2P transactions

All utility tokens can be used for P2P transactions between users and crypto community for a fees for execution in the Ethereum Public Network environment.

Exchange into Karvuon security tokens

150,000,000 Karvuon utility tokens will be used for the Karvuon STO campaign. In this case, utility tokens purchased during the Karvuon IEO can be used for Karvuon security token purchase (exchange). All exchanged utility tokens will be burned.

Karvuon utility tokens will possess the following characteristics:

Characteristics	Token
Variable value	yes
Tradable on crypto-exchanges	yes
Tradable P2P	yes
Access to the platform	yes
Fractional amount	yes
Available worldwide	Depending upon exchange

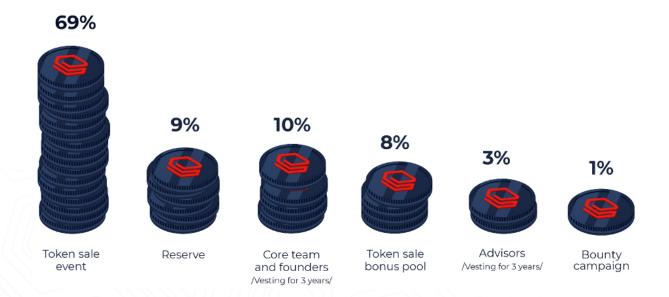
ERC20
Exchange fees
Utility token
Exchange-registered users
1,246,840,000 tokens
860,319,600 tokens
\$0,02
\$17,206,392
\$5,000,000

TOKEN DISTRIBUTION MODEL

The total Karvuon token amount is going to be distributed in the following way:

- 9% Core Team and Founders (vesting for 3 years)
- 3% Advisors (vesting for 3 years)
- 1% Bounty Campaign
- 69% Token Sale Event
- 8% Token Sale Bonus Pool
- 9% Reserve

Token Distribution

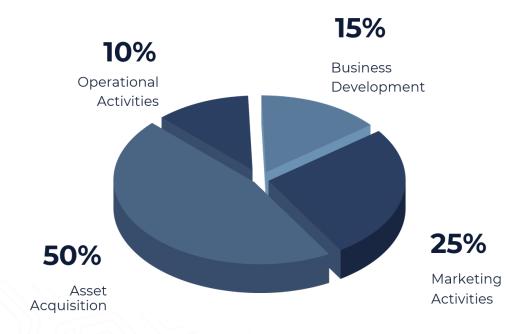


USE OF FUNDS

Funds raised during the IEO campaign will be used for the following activities:

- 15% for business development purposes
- 25% for marketing activities
- 10% reserved for operational activities
- 50% for the asset acquisition

Funds Allocation



IEO CAMPAIGN STAGES

Our IEO campaign is divided into the following phases:

Phase 1

During this phase, we are going to distribute 250,000,000 Karvuon utility tokens, with a 25% bonus token for initial investors. This phase will be divided into several stages, and will include the biggest bonuses for our initial investors.

- Phase 1 token supply: 250,000,000 tokens
- Bonus tokens 25% (62,500,000 tokens)
- Token price \$0.02
- Hard cap \$ 5,000,000

Phase 2

During this phase, we are going to distribute 371,800,000 Karvuon utility tokens, with a 10% bonus token for investors.

- Phase 2 token supply: 371,800,000 tokens
- Bonus tokens 10% (37,180,000 tokens)
- Token price \$0.02
- Hard cap \$ 7,436,000

Phase 3

During this phase, we will distribute 238,519,600 Karvuon utility tokens, without bonus tokens.

- Phase 3 token supply: 238,519,600 tokens
- Bonus tokens no
- Token price \$0.02
- Hard cap \$ 4,770,392

All of our IEO phases will be divided into several stages depending on our development roadmap, and could be launched on separate crypto exchanges. All IEO stages details will be announced on our official website and official blogs.

SECURITY TOKEN OFFERING

As mentioned above, investments gathered during our IEO campaign will be used for marketing activities and promotion of the Karvuon project, further IEO stages, and the STO campaign.

The STO campaign will be launched on the Karvuon platform 3 months after the IEO campaign is completed. The Karvuon STO campaign and the token itself will be different from the Karvuon utility token and IEO campaign. The legality and the investment nature will occur in a different environment and we will be compliant to the jurisdiction which the STO campaign will be held in.

Karvuon security tokens will have a stable price of \$1. For the STO campaign, we are deploying 60,000,000 security tokens on the Ethereum Public Network. In this case, only a limited amount of 150,000,000 Karvuon utility tokens can be used for the STO campaign, as the utility token price is equal to \$0.02 and 50 utility tokens will be equal to \$1.

Karvuon security tokens will provide token holders with the ability to receive payments every reportable period (quarterly, semi-annually, annually) after official financial reports.

Holder payments will equal 9-15% (according to projected scenarios) of Karvuon generated revenues.

Our monetization model includes several revenue streams, providing our security token holders with fast ROI and additional incentive for participation in our STO campaign.

Karvuon security tokens will possess the following characteristics:

Characteristics	Token
Purpose	Security
Variable value	no
Tradable on specialized exchanges	yes

Tradable P2P	yes
Fractional amount	yes

TOKEN SPECIFICATIONS

ERC20 Utility Token on the Public Ethereum Network

The ERC20 utility token on the public Ethereum Mainnet is used for the following purposes:

- 1. Token-generation event (TGE) for funding
- 2. Listing on public exchanges
- 3. Transactions between users
- 4. Exchange into security tokens

Key features of token economics:

- 1. Token distribution via TGE
- 2. Implemented inflation
- 3. Token price reduction with fees payable in ETH

ERC20 Security Token on the Public Ethereum Network

ERC20 security token on the public Ethereum Mainnet is used for the following purposes:

- Token-Generation Event (TGE);
- 2. Listing on the specialized exchanges;
- 3. Transactions between users;
- 4. Income distribution.

Key features of the token economics:

- 1. Token distribution via TGE;
- 2. Stable, low-volatility token price.

ERC20 Utility Token on the Public Ethereum Network

The ERC20 utility token on the Ethereum Public Network will be used for the following purpose:

1. The accounting of the payment process.

Key token economics features:

- 1. An unlimited supply of ERC20 utility tokens within the internal platform environment
- 2. Fees for ERC20 token transaction execution paid in ETH by token holders.

ROADMAP



Karvuon's team is working hard to achieve the following milestones in the shortest period of time:

January 2020 - Karvuon token issuance; IEO launch

- 2020 Karvuon Private Fundraising
- 2020 Project development
- 2020 Karvuon Smart Grid development
- 2021 Karvuon Smart Grid implementation in Mongolia's Central Grid
- 2022 Production of electricity
- 2022 Industrial park operation

TEAM

Karvuon's team is comprised of IT and Energy sector professionals with over 20 years of experience in each field. Our main goal is to supply the blockchain industry with clean energy.



MANLAI BAT-ORSHIKH CEO, Founder

Manlai Bat-Orshikh is alumnus of Colorado State University and with his degree in computer science, he founded a technology company Mezorn LLC in his hometown Ulaanbaatar, Mongolia. Also, he has co-founded several successful startups such as UBCab - taxi hailing system and UBCab Express - onDemand service platform. Applying his over 10 years of system analytics and distributed computing experience, Manlai is the CEO and co-founder of Karvuon LLC.



GANTIG BAYARMAGNAI COO, Co-founder

Gantig has been a fouder of cryptocurrency Mongolia group since August 2017. He is also the CEO of Trade.mn - first cryptocurrency exchange platform of Mongolia. With the business administation degree Gantig works as the COO of Karvuon LLC, Energy Park for the Blockchain Industry, CEO of BitMonEx LLC, Cryptocurrency Exchange, and is a founder of biggest cryptocurrency community in Mongolia with over 15,000 active members.



ERDEM BATSAIKHAN

Holding bachelor's degrees in computer engineering and information system, Erdem is the co-founder and also operates a technical Karvuon department.



ZOLBAYAR ODONSUREN

Business developer

As a developer and system architect, Zolbayar works with various programming languages, databases, and frameworks. He has developed a range of applications, collaboration system for parliament members, tax indicator and data visualization for the Mongolian tax office as well as platforms and applications for educational, banking and governmental institutions.



GABIT BAZAR

Chief Strategy Officer

Gabit Bazar is the Founder and Chairman of Infinite Solutions LLC headquartered in Ulaanbaatar, Mongolia. Gabit is an alumnus of Stanford University (Management Science and Engineering). Along with his partners has successfully raised joint investments and launched successful startups in the Silicon Valley, Denver and New York. His expertise includes global entrepreneurial strategy, technology architecture and sustainable product development. Currently invests his time in Al/Deep Learning, EdTech, and FinTech.



UNENBUREN ULZIIBUREN

Chief Investment Officer

Unenburen is a successful young entrepreneur. Currently, he serves as the CEO of three companies that operate in the fields of international trade, real estate and technology. He was named by the Forbes Mongolia on their '30 Under 30' list of the most influential change-makers in the country.

He graduated high school in Vienna, Austria and holds a Bachelor of Arts degree from Beijing International Studies University in Beijing, PR China. His cross-cultural background enables him to have a deep connection in both Business and Politics.



BILGUUN DASHDORJ

CFO

Bilguun Dashdorj is an investment banker with 10 years of experience in financial markets of Japan, UK, and Mongolia. Starting his career in Nomura Securities, the largest investment bank in Japan, he has worked on some of the biggest public equity issuances on the Tokyo Stock Exchange. Upon coming back to Mongolia, he led the investment banking division of Golomt Capital, a subsidiary of one of the top 4 banks in Mongolia, and successfully completed some of the largest public offerings at the Mongolian Stock Exchange.

Bilguun holds an MBA degree from London Business School, and BA degree from Hitotsubashi University, Japan.



BILGUUN TURBOLI

Tech Advisor, AI developer

Bilguun has a deep learning nano degree and is a master of applied data science. He worked as a senior developer and data analyst in the Mongolian Data Center, assisted in the New York university and is currently advising on technical issues and deploying Al solutions.



USUKHBAYAR GANBAATAR

Research Analyst

With the bachelor degree in information system, Usukhbayar has a vast experience working as a senior developer and currently works as a research analyst for Karvuon LLC.

ADVISORS



BYAMBASAIKHAN BAYANJARGAL Chief Adviser

Byambasaikhan - Cofounder of NovaTerra, an investment and advisory firm. Special Envoy of the President of Mongolia on Regional Energy Cooperation. Mongolia Country Coordinator for Northeast Asia Power System Interconnection Strategy project. Previously CEO of Erdenes Mongol LLC, Mongolia's sovereign wealth management company. Developed and built first wind farm/IPP in Mongolia as CEO of a Mongolian technology investor Newcom. Was board director of Oyu Tolgoi, a world class copper and gold producer managed by Rio Tinto. Financed energy projects in Central Asia with Asian Development Bank. Currently: Trustee - National University of Mongolia, - Arts Council of Mongolia, - Zorig Foundation USA; Chair - Green Building Council of Mongolia; VP - Mongolian Archery Association. Honorary Consul of South Africa in Mongolia. Sponsor, Environmental Fellowship Program.

Focuses on Asia Super Grid, Clean Energy, Regional Connectivity and Cross-Border Infrastructure. Infrastructure project financier and business executive, managed investments for public and private sector clients. Structured power plant, transmission and distribution investment transactions and lead multidisciplinary project teams in emerging Asian markets. Financed power projects and corporate finance deals through international and bilateral financial institutions, ECAs and carbon funds. Chaired the board of Mongolia's largest telecom company, a JV with Sumitomo and KDDI. Established JV between GE, EBRD and FMO. Structured financing for a copper processing plant in Mongolia.



ZOLJARGAL DASHNYAM

Legal Advisor

Zoljargal holds the Master of Laws degree from Harvard Law School, USA and also is a master in business administration in finance (Oklahoma City University, USA). With her exerience in in the arts of law she advises projects and business with legal issues.

BLOCKCHAIN ADVISORS



IHOR PIDRUCHNY
Advisor, Applicature CEO

Ihor Pidruchny is co-founder and CEO at Applicature. In addition to managing the company, Ihor coaches blockchain companies and helps strategize tokenization across various industries. An experienced technology manager and advisor in the blockchain arena, Ihor has been involved in many blockchain projects, token sales, and technical-development projects.



ANDREW ZUBKO

Advisor, Applicature CTO

Andrew is a blockchain architect with impressive experience. Having successfully completed his first blockchain project in 2014, he participated in technical support for token sales and the cryptocurrency ecosystem before it became mainstream. His technology stack includes, but is not limited to, C++, Java, JavaScript, Python, Solidity, and more.



IVAN NOVOSIOLOV Advisor, Applicature CMO

10+ years marketing experience. Successful campaigns and strategy implementation in multiple various industries. One of the creators of cyclable marketing for tech companies.



PAVLO KLOKOV Blockchain consultant, BA

With vast experience in ICO launches, crypto-trading, and workflow management, Pavlo guides projects and provides consultation through the development stage. Pavlo provides as much knowledge and assistance as possible with regard to smart-contract implementation, white paper and business-plan development, and solutions to various financial and economic issues in all types of industries.

PARTNERSHIPS











LEGAL DISCLAIMER