KUB

WHITEPAPER V4.0

TRANSFORMING THE FUTURE | DEMOCRATIZE OPPORTUNITIES FOR ALL

01

Overview

In the digital era, the combination of blockchain technology with cryptography provides access to endless business opportunities. Turning assets into tokens, removing the intermediary, increasing liquidity to non-liquid assets, immutable recordkeeping, and the ability to be transparently audited are all particular features that blockchain technology and Decentralized Finance have created and such technologies can be used to benefit business sectors. However, entrepreneurs and Small and Medium-sized Businesses (SMBs), as well as startups, have challenges accessing these technologies, preventing them from fully and comprehensively utilizing blockchain with their businesses.

Bitkub Blockchain Technology Co., Ltd. is a provider of Blockchain Full Solution Service and the developer of KUB Chain (referred to in this document as the **"KUB Chain Development Team"**). KUB Chain was developed to break down business barriers. It is the first blockchain network in Thailand aimed at providing accessible, secure, and efficiently scalable blockchain infrastructure for entrepreneurs, developers, and the general public. Developers are able to create Decentralized Applications with support to run these applications on the blockchain with low transaction fees (**"Gas Fees"**). Bitkub Blockchain Technology Co., Ltd., as a pioneer in driving blockchain technology in Thailand, and Bitkub Group aim to elevate Thai and Southeast Asian industries to the next level through KUB Chain.

To further develop Bitkub Chain, Bitkub Blockchain Technology Co., Ltd. has changed the name of Bitkub Chain to KUB, which was completed on March 10, 2025. This change is a significant step in the development of the blockchain network to the international level, with the main goal of creating a more international image to reach users at the international level. It also conveys the nature of a Public Blockchain that all entrepreneurs, developers and individuals can access and participate in freely, expanding the user base at the international level, including upgrading the development of converting real-world assets in physical form into digital form or digital tokens (Real World Asset Tokenization), and to promote the image of Decentralized Public Blockchain, increasing the transparency, security and sustainability of the KUB Chain ecosystem, enabling users worldwide to easily access blockchain technology, while expanding the community of users, developers and supporters of KUB Chain to grow strongly.

The KUB Chain Whitepaper is intended to provide information about the structure and operation of the KUB Chain network, as well as to describe the current status and future plans for the KUB Chain ecosystem, with KUB coin as the network's native token, which will facilitate seamless value exchange between users without the need for intermediaries. This document aims to provide information and knowledge to those interested in blockchain technology, and is a presentation of facts, developments and plans related to KUB Chain, which will show how the KUB Chain Development Team has designed KUB Chain to be a secure and accessible infrastructure for businesses ranging from small to large.

02

KUB Chain V4.0 Overview

KUB CHAIN WHITEPAPER V4.0 is the latest version of the KUB Chain information document that will shape the future of the KUB Chain network. This KUB Chain Whitepaper will remain the core of the KUB Chain network, which is committed to being a ready-to-use infrastructure for users in the system, and will identify the key changes that will occur to the KUB Chain network.

Currently, the KUB Chain network has more than 5,000,000,000 transactions on the network, ranking 5th compared to blockchain networks worldwide[1], and has a high number of registered Wallet Addresses up to 2,000,000 Addresses, which are divided into the number of Wallet Addresses from Bitkub NEXT Wallet, a digital asset wallet developed by Bitkub Blockchain Technology Co., Ltd., approximately 1,000,000 Addresses after launching for only 3 years and 3 months, and MetaMask wallet approximately 1,000,000 Addresses[2]. These statistics are good evidence confirming that KUB Chain is ready to become a public blockchain at the international level. In addition, KUB Chain has a low transaction fee on the blockchain in Gwei units, which is another factor contributing to Mass Adoption. The KUB Chain Development Team has discussed with the Validators and adjusted the Gas Price per transaction on the KUB Chain network from 50 Gwei to 5 Gwei, resulting in the KUB Chain Development Team needing to change the coin distribution model for the suitability and sustainability of the KUB Chain network.

To promote the utility of the KUB coin, the KUB Chain Development Team has designed the features of the KUB coin, which will be described in this KUB Chain Whitepaper. However, the KUB coin has a variety of features and can be used to pay Gas Fees on KUB Chain. In addition to the initial benefits, KUB coin can also be staked to become Validators or Delegators on the Proof-of-Stake (PoS) consensus system of KUB Chain, including exchanging rights or participating in activities to be eligible to receive gKUB token used for participating in the KUB Chain community through the KUB Chain Voting Platform https://vote.bitkubchain.com/.

In this KUB Chain Whitepaper, the KUB Chain Development Team has added a development plan (Roadmap) that focuses on developing the network ecosystem and blockchain technology infrastructure to be stronger, more sustainable, and able to support more usage. The rebranding from Bitkub Chain to KUB Chain is a significant step in developing the blockchain network to the global level, with the main goal of creating an image of Decentralized Public Blockchain and reaching users worldwide. This change will focus on increasing the potential and expanding the scope of KUB Chain to be accepted internationally.

To achieve this goal, KUB Chain will adjust its strategies in various areas, including:

- Adjusting the structure of Node Validator participation to increase the efficiency and stability of the network.
- Re-adjusting the allocation of KUB coin to align with the needs of using KUB coin to maximize benefits for KUB Chain according to current and future development plans, which has a positive effect on KUB coin being able to operate more diversely to support the strategy that will lead KUB Chain to grow sustainably in the long term.
- Establishing measures to support cases where Nodes do not work to ensure the continuity of service.
- To determine a direction for the transition from KUB Chain to KUB Foundation or any other suitable organizational form, such as KUB Association, to further promote the image of a Decentralized Public Blockchain. This action will depend on the outcome of legal studies and relevant regulations both in Thailand and the country where the KUB Foundation or the new organizational form will be established.
- Increasing transaction support efficiency to accommodate the growth of the network and the increasing volume of transactions in the future.

The KUB Chain Development Team sincerely hopes that the changes in the KUB Chain Whitepaper V4.0 will accelerate the mass adoption phenomenon at the international level, while inspiring users to create new innovations to democratize opportunities in various fields in the era where the internet has value for individuals fairly and equally.

03

Table of Contents

04

Introduction to Bitkub Ecosystem

4.1 About the Pioneers of KUB Chain Development

Affiliates in Bitkub Group have accelerated the adoption of blockchain technology in Thai society via development of the infrastructure necessary for a decentralized financial system. Mission of affiliates in Bitkub Group is the development of a blockchain ecosystem platform that serves as a one-stop service for everyone from typical investors to large corporations in order to improve knowledge, comprehension and awareness of technology to any person in any sector, so that they can apply and adapt blockchain technology to their business sectors.

Bitkub Capital Group Holdings Co., Ltd. was founded in 2018 with the core mission to provide services in relation to cryptocurrency technology and blockchain via any company in the affiliates of Bitkub Group, such as digital assets exchange platform services, blockchain technology and development consultant services, knowledge center of digital assets and blockchain and others as mentioned subsequently. Bitkub Capital Group Holdings Co., Ltd. currently has the total registered capital of 74,154,380 Baht and its headquarter is located in Bangkok, Thailand.

Other than Bitkub Capital Group Holdings Co., Ltd., the affiliates of Bitkub Group has 7 companies as below :

Bitkub Online Co., Ltd.
Thailand's leading digital assets exchange service provider which offers digital assets trading and storage services, with security systems under international standard, to both individual and corporate customers.

Bitkub Blockchain Technology Co., Ltd.
A Blockchain Full Solution Services provider, offering consultancy on blockchain technology and digital asset design to organizations, government agencies, private sectors, and entrepreneurs looking to elevate their businesses with blockchain technology. This includes providing the Bitkub NEXT Wallet and other blockchain-related products.

Bitkub Labs Co., Ltd.
A knowledge-sharing provider of blockchain technology, digital assets and relevant technologies in order to prepare for the future economy of which blockchain technology will play a significant part in Thai social context.

Bitkub Ventures Co., Ltd.
The provider of financing to support the development of business focusing on investment in a startup or startup that operates blockchain business, with the purpose to drive the future of blockchain by assisting new entrepreneurs with expertise in digital assets, investment, banking, and business consultant.

Bitkub Moonshot Co., Ltd.

The company focuses on offering innovative works in the field of technology, including the development of Decentralized Applications and artificial intelligence (AI) systems, along with enterprise platform creation of both government agencies and private sector organizations, enabling businesses to adapt with the dynamic digital world and to solve technological challenges efficiently and with a skilled team of experts to solve business challenges of the customers with flexibility and security altogether with responding to the customer's needs in business aspect appropriately and efficiently.

Bitkub Portal Co., Ltd.

The company has received approval from the Securities and Exchange Commission (SEC) to operate as a Digital Token Offering System Provider (ICO Portal) and is currently awaiting the SEC's consideration regarding the readiness of Bitkub Portal Co., Ltd.'s operational systems before commencing business. This service represents a new alternative for increasing opportunities for various businesses, particularly in fundraising. Bitkub Portal Co., Ltd. was established by a management team with expertise in traditional fundraising. With the management team's prior experience and the experience of related staff in decentralized network and blockchain development, Bitkub Portal Co., Ltd. aims to create a secure and accessible service for investors and entrepreneurs seeking to issue and offer digital tokens.

Kubplay Entertainment Co., Ltd.

A joint venture company that operates in developing a comprehensive blockchain ecosystem for games that adhere to the original business model (Conventional Game) to be enabled to transform its business model to Hybrid GameFi and also the acquisition of online game licenses from the developers to provide services within its ecosystem.

4.2 Development Team

Passakorn Pannok

A Chief Executive Officer of Bitkub Blockchain Technology Co., Ltd., who has over 13 years of experience in the software industry, with expertise in software engineering; coding of the smart contract on blockchain networks, especially Ethereum and HyperLedger. In addition, he is also a lecturer of software engineering course at Burapha University.

Samret Wajanasathian

Highly experienced Chief Technology Officer with a demonstrated history of working in the computer software industry. Skilled in C/C++ native programming, native multi-threaded application, Agile Methodologies, Java, Console Games, distributed/decentralized/grid computational application, and Software Development. Strong information technology professional with a Bachelor's Degree focused in Computer Science from Silpakorn University. His current position is President of KUB.

Niorn Kiatdamrong

A Chief Commercial Officer of Bitkub Blockchain Technology Co., Ltd., who has over 11 years of experience as a business consultant and corporate director. She graduated with a Bachelor's in Business Law from Chulalongkorn University and a Master's Degree of International Business from Griffith University in Australia.

Hargobind Singh Chawla

A Product Director of Bitkub Blockchain Technology Co., Ltd., who has over 7 years of experience in the blockchain, Web3, and crypto industry. Significant success in leading product management team, product lifecycle, and expertise in agile and scrum methodologies. He graduated with a Bachelor's in Science and Technology in Information and Technology from Stamford International University.

Consultant Team

Prof. Dr. Dusit Niyato

A professor of the School of Computer Science and Engineering, Nanyang Technological University (NTU) in Singapore. He graduated with a Bachelor of Engineering from King Mongkut's Institute of Technology Ladkrabang, Master of Science and Doctor of Philosophy in Electrical and Computer Engineering from University of Manitoba, Canada.

05

KUB Chain

5.1 Development Initiatives

KUB Chain was developed to address the problems of the blockchain ecosystem at both the national and regional levels that are currently emerging. The first problem that can be found in Thailand is that Thailand still lacks a blockchain network infrastructure for the industrial sector, causing Thai entrepreneurs to rely on blockchain network infrastructure developed by foreigners, which has a relatively high Gas Fee and low transaction speed, which is an obstacle to bringing blockchain technology to practical business applications. Another problem that makes blockchain not yet widely used is that the business sector needs to have sufficient basic knowledge and technological understanding of blockchain.

KUB Chain was developed to be an infrastructure for the industrial sector and to allow individuals to become Validators to verify transactions and create new blocks on the blockchain. KUB Chain aims to support blockchain users by setting an appropriate Gas Fee while maintaining a high transaction speed that is both secure and efficient to facilitate developers of new projects, as well as promoting participation through activities and infrastructure on the KUB Chain network.

5.2 Vision

KUB Chain will be the leading blockchain network that democratizes access to technology and increases economic value for everyone equally, with transparency, security, and efficiency.

5.3 Mission

KUB Chain has a mission to develop high-performance blockchain technology to support widespread real-world usage by international developers. It also aims to support the creation of blockchain technology knowledge, promote participation from all sectors in the ecosystem, and elevate economic value for the Southeast Asian region.

5.4 Value Delivered to Participants

KUB Chain is a blockchain network developed to support widespread blockchain adoption, enabling all sectors to develop, create, and distribute opportunities through blockchain technology. With its strengths in high efficiency, low fees, and fast transaction speeds, KUB Chain also comes with a comprehensive ecosystem, featuring numerous tools and applications that simplify blockchain development and usage. Furthermore, KUB Chain prioritizes security and transparency, ensuring that all transactions are accurately recorded and verifiable. KUB Chain also provides opportunities for everyone to create and develop diverse products on the blockchain. Whether you are a developer or a general user, you can leverage KUB Chain to create new innovations freely.

KUB

The features of the KUB Chain network can support the creation of applications or software on the blockchain, and further enable users, both at the general and organizational levels, to fully utilize the benefits of blockchain technology and apply what is built on the blockchain to their businesses. This results in the expansion of the KUB Chain ecosystem.

KUB Chain can support a wide range of Decentralized Finance (DeFi) products, from lending, decentralized exchanges (DEXs), Data Oracles, and Data Tokens, to Yield Farming.

To serve as a foundation for a flexible and scalable blockchain ecosystem capable of efficiently handling increasing transaction volumes, KUB Chain is designed and developed to support high transaction loads while maintaining reasonable gas fees and ensuring security and transparency.

The following are the values that KUB Chain will provide to its users and developers.
- Overcome business barriers by being a network that allows both small and large entrepreneurs to do business together.
- Business partners can apply KUB Chain to develop decentralized systems.
- Convert assets into token form.
- To increase liquidity for illiquid assets and provide a supporting market.
- Provide an easily accessible infrastructure for everyone to encourage the practical application of KUB Chain to various industries and businesses.
- Make using Smart Contracts or applications on the blockchain easier.
- Provide knowledge and understanding of blockchain technology and other technologies to support entrepreneurs, developers, and the general public to access and use blockchain technology through expert personnel from companies in the Bitkub Group who have skills, experience, and knowledge.
- Support developers with both tools and funding support to create opportunities for growth together with the KUB Chain ecosystem.

5.5 Technical Description
KUB Chain

KUB Chain is built to be the infrastructure of the new era of the internet, an era where valuable assets are increasingly being transformed into digital formats. KUB Chain aims to be a network of this new internet era that securely, transparently, and conveniently facilitates the transfer of value over the internet on a decentralized network. KUB Chain will provide opportunities for everyone to participate in creating projects and applications on the decentralized network. Those who participate in the network will benefit from reasonable gas fees and fast transaction speeds.

Currently, the operation of various applications that we use today is often connected to the database of that application, where the data is stored and accessed by a single person. This type of data storage is called a Centralized system, which is different from KUB Chain, which has a Decentralized operating concept.

The principle of decentralization creates a set of databases. This large set of databases is distributed and stored among related individuals and can be used to connect to applications that require this database independently. The group of people who store this data is called a Node, which also distributes the storage of all identical data records in each Node. Then, applications running on KUB Chain can access, store, and use data according to the application's operating mechanism or process data through the Virtual Machine or Smart Contract that processes transactions according to the needs of that application.

KUB Chain consists of 1 main network and 2 sub-networks including 1) KUB Chain Mainnet is the mainnetwork that is live and used for actual transactions. 2) KUB Chain Testnet is for developers to test functionalities before deploying them on the Mainnet. 3) Khaosan Network is a prototype network used to experiment and develop new technologies on customized hardware. The test results will be used for further development on the KUB Chain Mainnet.

Details of all 3 networks are as follows:

KUB Chain Mainnet
Consensus: Proof-of-Stake (PoS) Chain Configuration
- Network Name: Bitkub Chain Mainnet
- New RPC URL: https://rpc.bitkubchain.io
- Chain Id: 96
- Block Period: 5 seconds
- Gas Price: Dynamic (minimum 25 Gwei)

KUB Chain Testnet
- Network Name: Bitkub Chain - Testnet
- New RPC URL: https://rpc-testnet.bitkubchain.io
- Chain ID: 25925

Khaosan Network
- Network Name: Bitkub Chain - Testnet Khaosan
- New RPC URL: https://khaosan-rpc.bitkubchain.io
- Chain ID: 25925

KUB Chain Consensus

A Consensus Mechanism is the heart of blockchain technology. It acts as a process that helps nodes in the network reach an agreement on the state of information on the blockchain. It's like checking and confirming that the information in multiple ledgers is the same. This system is important for building trust, preventing fraud, and decentralizing power in a blockchain network.

Bitcoin was developed in 2009 as a Proof-of-Work (PoW) concept. Bitcoin has since become the cornerstone of the concept of Decentralized Digital Value Transfer. Despite the fact that Bitcoin is greatly acceptable and is a high value asset, it has been criticized for its large use of power and its tremendous environmental effect.

In 2012, a project called PeerCoin introduced an alternative concept to consensus technology: Proof-of-Stake (PoS), which was developed to solve the previously mentioned Bitcoin problem of requiring enormous amounts of electricity. Currently, the Proof-of-Stake (PoS) concepts are widely popular of which the projects that adopt this concept are Polkadot, Cardano, and Ethereum 2.0 projects.

Subsequently, the development of Proof-of-Authority (PoA) concept jointly with the emphasis of transparency of the person who validates transaction on blockchain, so-called the Validator, results the user of blockchain technology be able to access blockchain and obtain benefits from the low Gas Fee and the rapid confirmation of transaction of which, under the Proof-of-Authority (PoA), the user of the network shall rely on the reputation and honesty of the person who performs the duty as the Validator.

KUB CHAIN WHITEPAPER V4.O

KUB

KUB Chain initially operated with a Proof of Authority (PoA) consensus mechanism. This involved collaborating with business partners who acted as transaction validators, establishing trust in the network and enabling fast transaction confirmations. This benefited all network participants, including users, developers, and businesses involved with KUB Chain.

After KUB Chain fully launched its network with a Proof-of-Authority (PoA) consensus mechanism, in 2022, it transitioned to a Proof-of-Stake-Authority (PoSA) system for transaction validation. This marked the beginning of testing and development towards a Proof-of-Stake (PoS) system, with the goal of expanding opportunities for users to participate as transaction validators on a wider scale.

In 2023, KUB Chain transitioned its consensus mechanism from Proof-of-Stake-Authority (PoSA) to Proof-of-Stake (PoS) to further become more decentralized, enhance its security, and support wider real-world adoption across various industries. Following the successful completion of this transition, KUB Chain has continued to operate smoothly without any service interruptions (zero downtime).

KUB Chain's Proof-of-Stake (PoS) consensus mechanism is an open system that allows all users to become part of the KUB Chain network. Users can participate by becoming Validators or by delegating their authority for validating transactions to the Validator (Delegators). This is done by staking KUB coins, which increases the Validator's stake and encourages greater participation in transaction validation on the KUB Chain. This system promotes user engagement and enhances network stability.

KUB Chain Nodes

KUB Chain comprises 5 node types including Full Node, Archive Node, RPC Node, Relay Node and Validator Node.

- **Full Node**

  A Full Node functions to oversee and manage data within a distributed database system. It also introduces transactions to the network and accesses transactions on the network. Full Nodes are connected to communicate data with applications that require blockchain network data for transactions or to utilize Smart Contracts. Furthermore, each Full Node must update the Go Ethereum Client Software to process and manage data on the Distributed Ledger. The developers have separated the Nodes that accept transactions from the Nodes that sign (Signing) or validate transactions (Validator Node) to ensure that both operations do not compete for the same resources.

- **Archive Node**

  An Archive Node is a special node on the blockchain network that records all data, from the very first block to the present, including historical network status information. This differs from a Full Node, which only stores transaction data. The advantage of an Archive Node is its ability to thoroughly audit historical data, making it suitable for in-depth data analysis, Decentralized Application (dApp) development, and even data recovery. However, the disadvantages include the need for large storage space, high resource consumption, and lengthy data synchronization times. Nevertheless, Archive Nodes are extremely beneficial for those who need access to the entire historical data on the blockchain, such as data analysts or Decentralized Application (dApp) developers.

KUB

- **RPC Node**
  An RPC Node is a node that acts as a bridge between external applications and the blockchain. It helps applications like Wallets or Decentralized Applications (dApps) easily access and interact with data on the blockchain. The RPC Node receives commands from applications, such as sending transactions, reading data, or executing Smart Contracts, and forwards these commands to the blockchain network before returning the results.

- **Relay Node**
  A Relay Node is a node on a blockchain network that acts as a signal relay station. It forwards data and messages between other nodes. It receives information from a node, performs initial verification, and then transmits it to other nodes in the network. This helps increase data transmission speed, expand the network, and reduce the workload of other nodes, such as Full Nodes or Validator Nodes. The benefits of Relay Nodes include increased network efficiency and stability, as well as reduced operating costs. Relay Nodes are being used on the Khaosan Network.

- **Validator Node**
  Validator Node is responsible for verifying and confirming transactions before they are added to the Distributed Database through a process called Consensus. The Validator Node is in charge of validating and verifying transactions. Validator Node shall communicate with other Validator Node on the blockchain network to achieve consensus in every transaction on the Distributed Ledger.

Validators on KUB Chain

The Validator validates blockchain transactions on KUB Chain Network to ensure the security of transactions and decentralization of the blockchain. For KUB Chain, the group of individuals who participate as Validator must need to proceed with opening a Validator Node and stake their KUB to be entitled as Validators and receive reward determined by the quantity of KUB staked by each Validator. Additionally, Validators can also be Node owners, controlling Node operations and directly participating in maintaining the security and stability of the KUB Chain network. However, Validators need to have technical knowledge and the ability to set up the Node infrastructure. They are also responsible for maintaining the availability of the Node.

Delegator

Delegator of KUB Chain is a person who delegates authority for validating transaction to the Validator of which the Delegator no need to have technical knowledge and the ability to set up the Node infrastructure and require to stake KUB coin with Validators to validate transaction on the block and obtain reward proportionately dependent to the amount of KUB staked by dividing rewards between Validators and Delegators.

However, Delegators still depend on the performance of Validators, and there might be cases where some Validators have a lower chance of obtaining the right to verify transactions and receive rewards. Nonetheless, being a Delegator offers flexibility, as they can stake with other Validators.

KUB CHAIN WHITEPAPER V4.0

KUB

Type of Validators on KUB Chain's Proof-of-Stake (PoS)

Proof-of-Stake (PoS) of KUB Chain has been designed to have types of Validator for flexibility to support difference and readiness of the participants in validation of transaction with differences of knowledge in technology, resources and capital. However, any interested person can participate as a part of validation of transaction on KUB Chain by 3 different types as follows:

Official Node

Official Node is the type of Validator that allows the developer of decentralized applications to become Validator and provides opportunities for the users to join as Delegators with the Official Node, with a minimum initial amount of KUB staking of 1 KUB, and the percentage of shared reward is subject to the amount of KUB staking of which the Official Node has the right to charge the fee for staking (the **"Staking Fee"**) from the Delegator at the rate of 5% by deducting from each reward obtained.

- **Minimum Initial Amount of KUB Staking for Official Node:** 1 KUB
- **Minimum Initial Amount of KUB Staking for the Delegator:** 1 KUB
- **Placement of Infrastructure System:** On-Premises
- **Reward Percentage:** Subject to amount of KUB staking and Staking Fee deduction
- **Staking Fee:** Approximately 5%
- **Node Owner:** Official Node

Note: KUB Chain plans to discontinue Official Nodes in the future to fully promote its image as a Decentralized Public Blockchain.

Pool Node

Pool Node is the type of Validator that allows users to become Validator with the minimum initial amount of KUB staking of 1,000 KUB to be eligible for this type of Validator and allows the users to participate as Delegator with Pool Node, with the minimum initial amount of KUB staking of 10 KUB and the percentage of shared reward is subject to the amount of KUB staking of which the Pool Node has the right to charge the Staking Fee from the Delegator by deducting from each reward obtained and the percentage of staking fee deduction shall be imposed by the Pool Node.

- **Minimum Initial Amount of KUB Staking for Pool Node:** 1,000 KUB
- **Minimum Initial Amount of KUB Staking for Delegator:** 10 KUB
- **Placement of Infrastructure System:** On-Cloud or On-Premises
- **Reward Percentage:** Subject to amount of KUB staking and the payable deduction of Staking Fee
- **Staking Fee:** Set out by the Pool Node Validator
- **Node Owner:** Pool Node

Solo Node

Solo Node is a type of Validator that allows the users to become Validator. This requires the minimum initial amount of KUB staking of 10 KUB and the reward percentage is determined by the proportion of KUB staked on every node on KUB Chain.

- **Minimum Initial Amount of KUB Staking for Solo Node:** 10 KUB and unable to allow the Delegator to jointly stake KUB
- **Placement of Infrastructure System:** On-Cloud or On-Premises
- **Staking Fee:** No Staking Fee since Delegator is not allowed to participate in the staking
- **Node Owner:** Solo Node

KUB

Tech Partner

HUAWEI	Huawei Technologies (Thailand) Company Limited	
MFEC Public Company Limited	MFEC Public Company Limited	
PROEN Corp	PROEN Corp Public Company Limited	

For change of consensus mechanism of KUB Chain from Proof-of-Stake-Authority (PoSA) to Proof-of-Stake (PoS), Bitkub Blockchain Technology Co., Ltd. or affiliates of Bitkub Group (accept Bitkub Online Co., Ltd.) may participate as the Official Node to enhance confidence to the relevant stakeholders of KUB Chain that this change of consensus mechanism of KUB Chain shall not affect the reliability and implementation of Node for validation of transaction on KUB Chain.

KUB Chain has plans to adjust the types of Validators in the future to allow greater access and participation in transaction validation for everyone. This aims to promote the image of a fully Decentralized Public Blockchain, and to foster greater transparency, fairness, and efficiency. It will also help strengthen, build trust in, and ensure the long-term sustainability of the KUB Chain ecosystem. Details about the plan for adjusting the types of transaction validators will be announced later.

5.6 Related Technology

Validator Quorum

During the Genesis Stage or starting period of blockchain, only trustworthy Nodes serve as the Validators on KUB Chain. After the consensus transition from PoA and PoSA to PoS, everyone can participate as the Validators. For KUB Chain, every block is created every 5 seconds and the Epoch length is 300 blocks, which means that each Epoch is around 1,500 seconds or 25 minutes apart, with plans to develop from Single Epoch to Multi-Epoch in the future.

KUB Chain Compatibility

- **Ethereum Virtual Machine Compatible (EVM)**
  Interoperability is one of the key features that enables blockchain to be widely used. Currently, Ethereum is the largest network and is the prototype of token, Decentralized Applications and Smart Contract. KUB Chain Development Team sees the importance of such blockchain infrastructure, so KUB Chain Development Team has developed KUB Chain to support Ethereum-based Smart Contracts.

- **Software Development Kit Compatibility**
  Software Development Kit Compatibility allows the Developer to create their work conveniently and to work interoperable with the network. KUB Chain is compatible with a wide range of Software Development Kit Compatibility, including:
  - Support Web3.js
  - Ether.js (optional)
  - Truffle.js library
  - KUB Chain SDK

- **Online (Web 3) Wallet Support**
  KUB Chain is the blockchain infrastructure that supports decentralized wallets such as Metamask, Rainbow, Rabby, Coinbase and Bitkub NEXT Wallet. As a result, individuals who own their private key may transfer, receive, and store digital assets on their own.

06

KUB Coin

6.1 Coin Utility

KUB is the Native Token of KUB Chain (comparable to Ether on the Ethereum network).
KUB has utilities as follows:

- **Gas Fee:** It functions as a unit of measurement for the amount of work accomplished by a Validator such as validating and confirming transactions, generating blocks, and securing transactions on KUB Chain network. Users shall be required to pay the Gas Fee by use of KUB of which the amount of Gas Fee required to be paid depends on the complexity and size of transaction generated on KUB Chain. The Gas Fee shall be used in these processes:
     1. The Gas Fee for transaction fee on blockchain network such as asset transfer, storage, and others.
     2. The Gas Fee for utilizing smart contracts or Decentralized Applications on the blockchain network.
- **Proof-of-Stake (PoS) Staking:** The holder of KUB can stake their KUB to be entitled as the Validator or the Delegator on KUB Chain's Proof-of-Stake consensus
- **Voting:** KUB holders are entitled to receive gKUB tokens to participate in the KUB Chain community, such as voting and participating in various activities within the ecosystem.

6.2 Coin-related Economic System

Tokenomics Overview

- **Coin Name:** KUB Coin
- **Abbreviation and Counting Unit Name:** KUB
- **The Current Total Amount of Coins** = 110,000,000 KUB
- **The Total Amount of Coins Presently in Circulation in the System** = 78,000,000 KUB

On August 9, 2021, KUB in the amount of 890,000,000 KUB has been burnt and destroyed in order to reduce the total original amount of KUB from 1,000,000,000 KUB to 110,000,000 KUB to be conformance with objectives of KUB Chain V2.0's that wished to lowering the Gas Price from 50 Gwei to 5 Gwei per transaction to urge mass adoption speedily in reasonable price. Due to the foregoing reason, it has caused KUB distribution ratio pursuant to the original coin distribution plan to be changed to correspond with the amount of KUB burnt or destroyed. And after KUB Chain Development Team has discussed with Validator Node to adjust Gas Price from 5 Gwei to 25 Gwei, on October 16, 2023, on the purpose of the adjustment the balance between related parties in the ecosystem, including general user, project developer, Validator, and Delegator in order to allow everyone to be a part of the development of KUB Chain towards the goal of becoming the foundational infrastructure of the digital economy in the future.

KUB Chain's tokenomic is designed to be long-term sustainable, with incentives for the user and an emphasis on maintaining network balance. The use of functions of KUB Chain must be exchanged with depletion of processing power of computers in the network. KUB is therefore utilized as the Gas Fee, for processing whilst the Validator shall obtain KUB as compensation for using a part of resource with procedures in the network such as confirmation of transaction or generating new block. Such a concept shall urge everyone to participate in the network more, in either the users that would like to transact or Validator who shall validate correctness and record data on blockchain. Furthermore, the rewards distributed to Validators are computed for each block and dispersed among Validators who took part in that particular block. This mechanism provides the network with an overview of KUB supply and promotes long-term network stability and security. Without this operation through the use of KUB, there would be no motivation for users to engage with the network.

Distribution of KUB[3]

Since Bitkub Chain Whitepaper V. 1.0 to Bitkub Chain Whitepaper V. 3.3, Bitkub Blockchain Technology Co., Ltd. has distributed and utilized KUB coin according to the purposes and proportions specified in the KUB Chain Whitepaper of which the distribution of KUB coin for the purposes outlined in the KUB Chain Whitepaper has resulted in significant and continuous development and growth of the KUB Chain. For example, there has been an increase in transactions, with the current number of transactions exceeding 5 billion. Also, the number of users has exceeded 3 million, and there are more projects supported from the KUB coin provided by KUB Chain.

Due to the purpose of utilizing the importance of KUB coin distribution is the important factor for the development and growth of KUB Chain and its ecosystem, the usage of KUB coin distribution must be diverse and aligned with the context of technology and the global digital asset industry in accordance with the current situation and the demands based on policies or plans for distributing KUB coin for various uses, both present and anticipated to promote development and enhance the capabilities of KUB Chain in various aspects to ensure that the utilization of KUB coin distribution is effective and maximizes the benefits for KUB Chain.

Due to the aforementioned reasons, Bitkub Blockchain Technology Co., Ltd. has adjusted the distribution of KUB coin to align with the necessity of utilizing KUB coin for the benefit of KUB Chain according to its current and future development plans of which developers has consolidated the unallocated portion of the **"Community Development Fund[4]" with the unallocated portion of the "Strategic Partners Fund[5]" into a new budget named the "Sustainable Blockchain Development Fund."** , of which such consolidation will positively impact the diverse utilization of the distributed KUB coins, aligning with the strategy to ensure KUB Chain's sustainable long-term growth. The details of the new KUB coin distribution are as follows:

Means of Distribution of KUB	Ratio to Total KUB	Amount of KUB (coin)	Period of Distribution of KUB
Ecosystem Fund	13.64%	15,000,000 KUB	Distributed 8,427,172.88 KUB
Sustainable Blockchain Development Fund	18.71%	20,586,496.24 KUB	Will be distributed for future utilization
Community Development Fund[6]	0.59%	643,543.05 KUB	Completed
Bitkub Capital Group Holdings Reserve Fund	9.09%	10,000,000 KUB	3 years locking period then unlock yearly for 3 years (first release in September 2024)

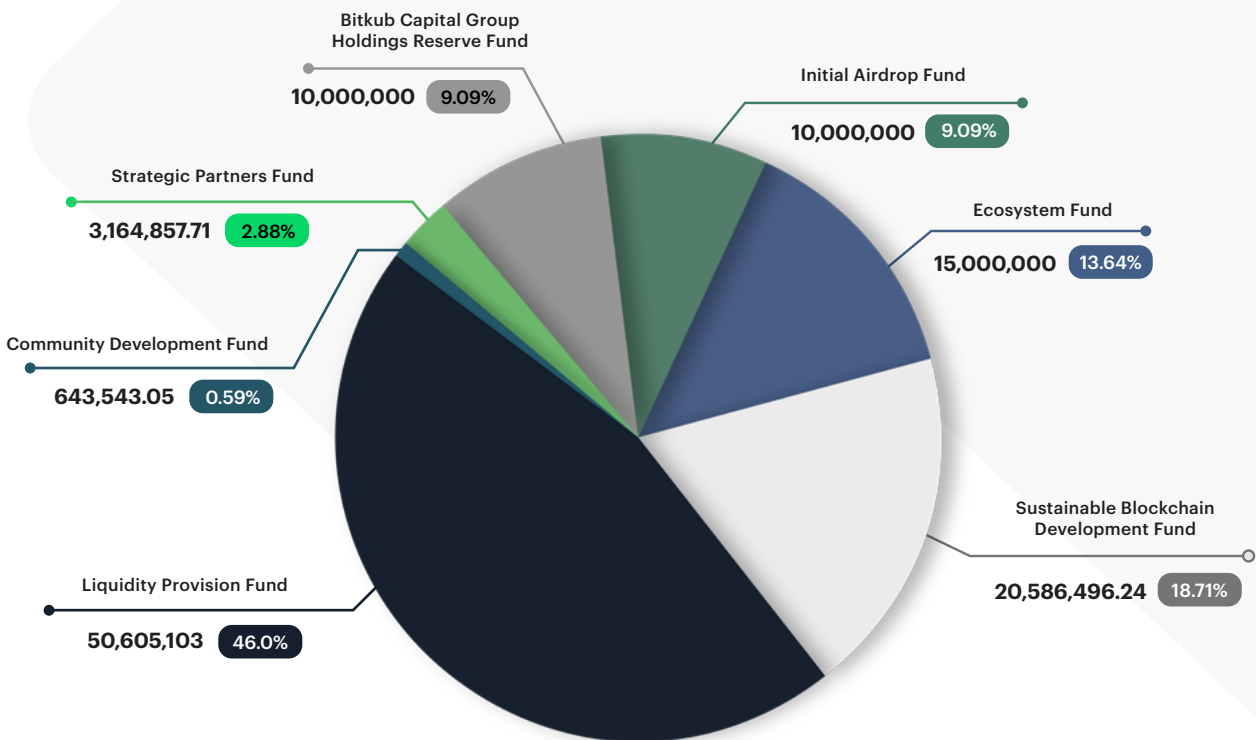| Liquidity Provision Fund	46%	50,605,103 KUB	Completed
Strategic Partners Fund[7]	2.88%	3,164,857.71 KUB	Completed
Initial Airdrop Fund	9.09%	10,000,000 KUB	Completed
Total KUB Supply	**100%**	**110,000,000 KUB**	

● **Ecosystem Fund -** This fund is managed by KUB Chain Development Team and used for a variety of purposes and be utilized in various forms and methods as deemed appropriate by KUB Chain Development Team to support and promote the ecosystem of KUB Chain which includes, but is not limited to, supporting and promoting the development of various projects on KUB Chain, supporting Validator, subsidizing Gas Fees, or developing other infrastructure that will help the KUB Chain ecosystem grow sustainably in the long term.

● **Sustainable Blockchain Development Fund -** This fund is derived from the consolidation of the Community Development Fund and the Strategic Partners Fund, specifically the unallocated amounts of 14,356,456.95 KUB and 6,230,039.29 KUB, respectively, as of February 11, 2025. This budget will be managed by KUB Chain Development Team and used for any actions deemed appropriate by KUB Chain Development Team for the benefit or advantage of the infrastructure, ecosystem, or users of KUB Chain, or to build a user network, or to promote the use of the KUB Chain network, or to establish relationships or support business partners to join the network, or for the development or growth of KUB Chain. This includes utilizing the original objectives of the Community Development Fund and the Strategic Partners Fund, such as the BKC Contributor Grant and others, as specified in previous versions of the KUB Chain Whitepaper.

● **Community Development Fund -** This fund is managed by the KUB Chain development team with the objectives as stated in the previous Bitkub Chain Whitepaper. However, due to the aforementioned changes in KUB coin distribution, the remaining 14,356,456.95 KUB coins under this fund, which have not yet been allocated, have been incorporated into the Sustainable Blockchain Development Fund. Therefore, this budget is now considered to be fully allocated.

● **Bitkub Capital Group Holdings Reserve Fund –** This fund belongs to Bitkub Capital Group Holdings Co., Ltd., and will be managed by Bitkub Capital Group Holdings Co., Ltd. It will be used as a reserve budget in case of emergencies or as deemed appropriate by the company's board of directors of Bitkub Capital Group Holdings Co., Ltd.

● **Liquidity Provision Fund –** This fund is managed by KUB Chain Development Team to support the liquidity of KUB on the first trading day in the Bitkub Exchange. On August 9, 2021, a total of 49,394,897 KUB that were initially locked were burned. Meanwhile, the remaining 50,605,103 KUB that had already been purchased continue to circulate in the digital asset market as usual.

- **Strategic Partners Fund -** This fund is managed by the KUB Chain Development Team with the objectives as stated in the previous Bitkub Chain Whitepaper. However, due to the aforementioned changes in KUB coin distribution, the remaining 6,230,039.29 KUB coins under this budget, which have not yet been allocated, have been incorporated into the Sustainable Blockchain Development Fund. Therefore, this budget is now considered to be fully allocated.

- **Initial Airdrop Fund -** This fund was managed by Bitkub Exchange to use as the fund for KUB distribution for Bitkub Exchange customers who had minimum collective purchase volume that met the criteria and time as set out by Bitkub Exchange. This fund was completely dispersed at the beginning of KUB's launching period.
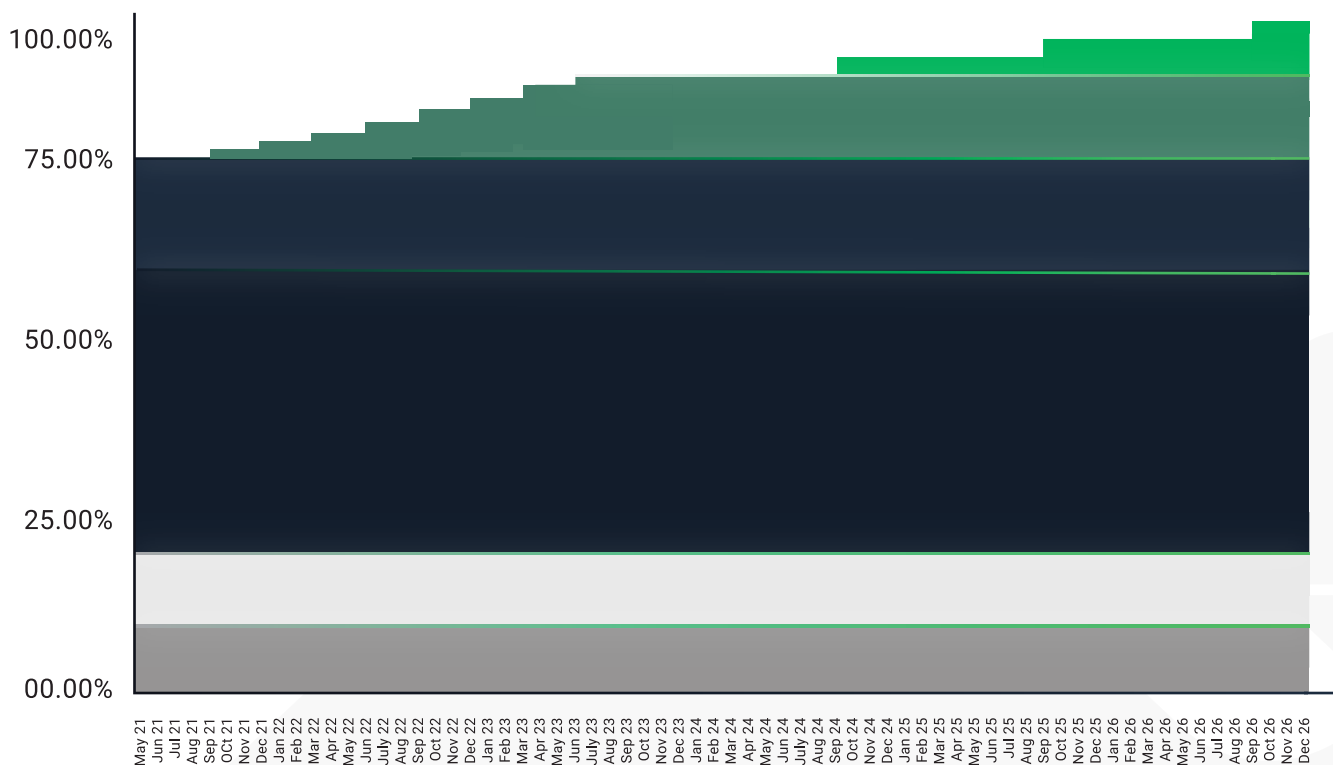
In the case that there are any yields or returns, in any form or manner (if any), from the use of KUB coin under the Ecosystem Fund, the Sustainable Blockchain Development Fund, the Community Development Fund, and the Strategic Partners Fund according to their intended purposes, such yields or returns shall become the property of Bitkub Blockchain Technology Co., Ltd. These shall not be considered part of the budget under the KUB Chain Whitepaper and Bitkub Blockchain Technology Co., Ltd. shall have sole discretion in handling these yields or returns in any manner.

For any returns or returns, regardless of their form or nature, arising (if any) from Bitkub Capital Group Holdings Co., Ltd.'s utilization of KUB coins from its reserve budget, shall be owned by Bitkub Capital Group Holdings Co., Ltd. These returns or benefits shall not be considered part of the budget under the KUB Chain Whitepaper. Bitkub Capital Group Holdings Co., Ltd. shall have sole discretion in managing and utilizing these returns or benefits in any manner.

Bitkub Capital Group Holdings Reserve Fund — 10,000,000 — 9.09%
Initial Airdrop Fund — 10,000,000 — 9.09%
Strategic Partners Fund — 3,164,857.71 — 2.88%
Ecosystem Fund — 15,000,000 — 13.64%
Community Development Fund — 643,543.05 — 0.59%
Sustainable Blockchain Development Fund — 20,586,496.24 — 18.71%
Liquidity Provision Fund — 50,605,103 — 46.0%

KUB CHAIN WHITEPAPER V4.0

KUB

Release Schedule

- ⬛ (green) **Bitkub Capital Group Holdings Reserve Fund**
- ⬛ (teal) **Community Development Fund**
- ⬛ (dark navy) **Ecosystem Fund**
- ⬛ (black) **Liquidity Provision Fund**
- ⬛ (light grey) **Strategic Partners Fund**
- ⬛ (grey) **Initial Airdrop Fund**
- ⬛ (white) **Sustainable Blockchain Development Fund**

07

Transition Plan to KUB Foundation or Any Other Organizational Format

Even though blockchain technology development of KUB Chain Development Team contributes to the transformation of blockchain technology in Thailand, the KUB Chain Development Team still faces challenges in several areas. These challenges may prevent the KUB Chain development team from fulfilling its vision and mission in developing KUB Chain. Therefore, to address these issues and to promote the image of the Decentralized Public Blockchain, the KUB Chain development team plans to establish the KUB Foundation or another appropriate organization, such as the KUB Association. This non-profit organization will manage KUB Chain in alignment with the KUB Chain development team's vision and mission, focusing on promoting knowledge, developing infrastructure, and raising awareness to encourage blockchain adoption and the development of use cases that meet societal needs. It will also aim to address various limitations and enhance KUB Chain's capabilities to serve a global user base. This initiative will be subject to the results of legal and regulatory studies in Thailand and the countries where the KUB Foundation or the new organization will be established.

This transition will begin from 2025 onwards, starting with communication, consultation, and education for stakeholders, such as relevant regulatory agencies. The KUB Chain Development Team hopes that the KUB Foundation or another suitable organization, such as the KUB Association, will help KUB Chain become a globally recognized and used blockchain network, expanding opportunities and creating benefits for users worldwide, in line with its vision: 'To become the leading blockchain network that democratizes access to technology and increases economic value for everyone equally, with transparency, security, and efficiency.

KUB

08

Operational Plans

- Renaming from Bitkub Chain to KUB (from BKC to KUB)
- Adjusting Validator Node requirements and removing Official Nodes
- Communicate, consult, and provide understanding to stakeholders, such as relevant regulatory agencies, and if there are no restrictions, establish a non-profit organization under the name KUB Foundation or any other suitable organizational form, such as KUB Association.
- Hardforking KUB Chain to upgrade transaction capacity from 5,000 transactions per block (TPB) to 25,000 TPB on the mainnet and 500,000 TPB in the future.

*Platform launch timeline and additional functionalities are subject to change without notice.

09

Disclaimer

PLEASE READ THE FOLLOWING STATEMENT CAREFULLY.
IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT A LEGAL,
FINANCIAL, TAX, OR OTHER RELEVANT ADVISER.

This KUB Chain Whitepaper has been prepared to describe the present facts and circumstances at the time of document preparation, as well as future plans related to KUB Chain and the KUB Chain ecosystem based on facts and circumstances at the time of document preparation only. Bitkub Blockchain Technology Co., Ltd. reserves the right to edit, update, or revise any statement in this KUB Chain Whitepaper.

Although this document has been prepared with intention and care to ensure that information, as presented in this document, is correct and up to date. The information presented under this document may have some parts that are not complete or inaccurate, especially events or operational plans in the future which may be occurred from risk factors including unforeseen events in the future such as limitation or mistake of technology, limitation of law or measurement to control market forces, discretion of Bitkub Group, inaccuracy of information of future circumstances that is changed from any forecast as expected. Bitkub Blockchain Technology Co., Ltd. does not warrant the correctness, completeness, validity and reliability of information as specified in this document and Bitkub Blockchain Technology Co., Ltd., its executives, employees, representatives including any other relevant person of Bitkub Blockchain Technology Co., Ltd. shall not be responsible if any person is damaged (by either foreseeable or unforeseeable circumstance) by using such information as a reference, interpreting, publishing, or doing any act by relying or referring to information as specified in this document without careful consideration.

This document is not prepared for the purpose of soliciting or persuading investment or providing advice relating to investment or trading of KUB or investment in assets or securities, and KUB is the instrument that makes its holder having rights and participation in the KUB Chain ecosystem only.

This document is not deemed as investment-related documents in any case and does not have the purpose for soliciting or persuading investment or trading of KUB or relevant assets, and KUB is the instrument that gives its holder the right to participate in KUB Chain ecosystem only.

KUB

References

[1] DappRadar (2024). Referenced on October 2024 from https://dappradar.com/rankings/chains?range=all and https://bkcscan.com/

[2] BKCScan. (2025). Referenced on 17 February 2025 from https://bkcscan.com/

[3] The total number of KUB coin as stated in Bitkub Chain Whitepaper V.1 was 1,000,000,000 KUB. However, Bitkub Blockchain Technology Co., Ltd. burned 890,000,000 KUB on August 9, 2021, leaving 110,000,000 KUB, as detailed in Bitkub Chain Whitepaper V.2.1 and subsequent versions.

[4] According to Bitkub Chain Whitepaper V.3.3, the total number of KUB coins under the "Community Development Fund" is 15,000,000 KUB. As of February 11, 2025, the distributed KUB coins under the "Community Development Fund" amount is 643,543.05 KUB, while the undistributed KUB coins amount is 14,356,456.95 KUB. The undistributed KUB coins will be transferred to the "Sustainable Blockchain Development Fund" as part of this KUB Chain Whitepaper V4.0.

[5] According to Bitkub Chain Whitepaper V.3.3, the total number of KUB coin under the "Strategic Partners Fund" is 9,394,897 KUB. As of February 11, 2025, the allocated KUB coin under the "Strategic Partners Fund" amounts to 3,164,857.71 KUB, and the unallocated coin amounts to 6,230,039.29 KUB. The unallocated KUB coin will be transferred to the "Sustainable Blockchain Development Fund" as part of the budget in this KUB Chain Whitepaper V4.0.

[6] "Community Development Fund" has been reduced from 15,000,000 KUB (which is 13.64% of the total KUB coin) to 643,543.05 KUB (which is 0.59% of the total KUB coin) due to the reallocation of KUB coin as outlined in this KUB Chain Whitepaper V4.0.

[7] "Strategic Partners Fund" has been reduced from 9,394,897 KUB (which is 8.54% of the total KUB coin) to 3,164,857.71 KUB (which is 2.88% of the total KUB coin) due to the reallocation of KUB coin as outlined in this KUB Chain Whitepaper V4.0.