Seasonal Tokens - White Paper

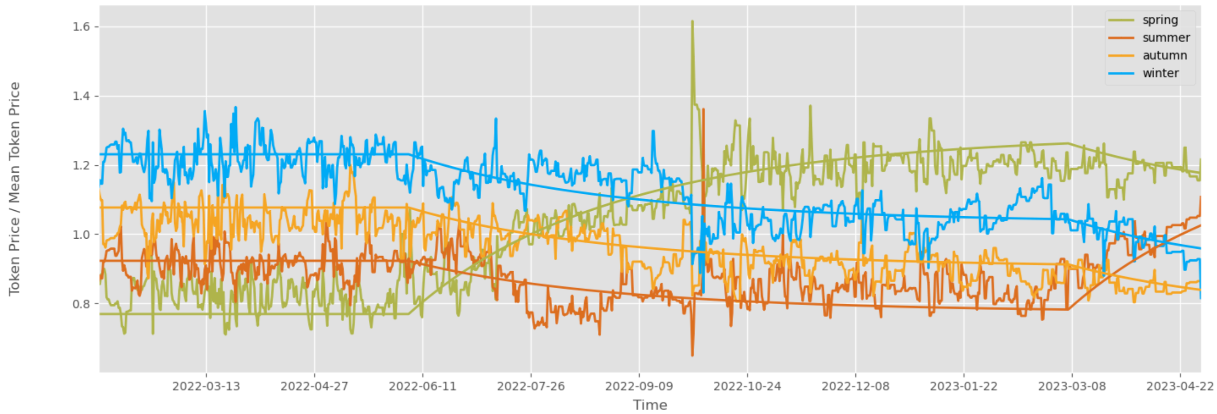
https://seasonaltokens.org/

Overview - Seasonal Tokens

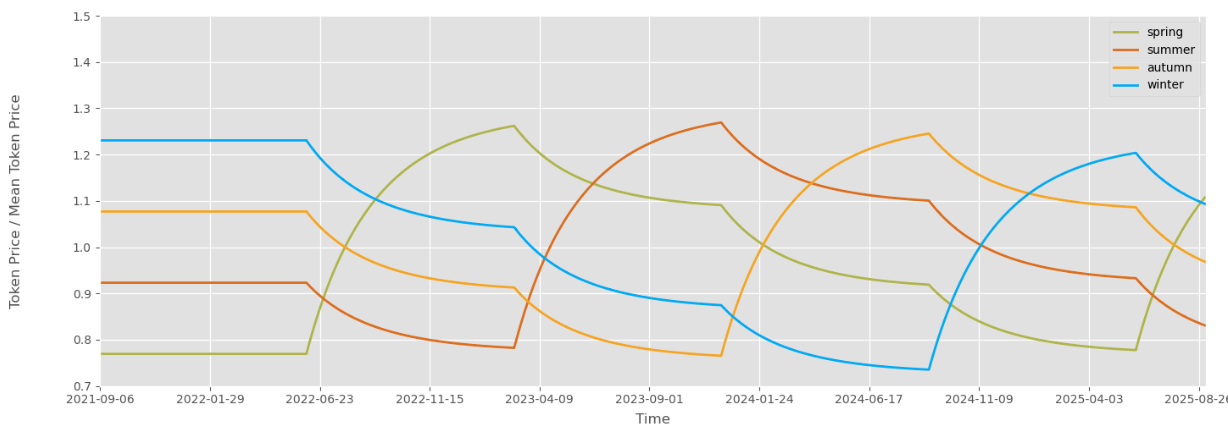
Seasonal Tokens can be described as an ethical and non-speculative tool for building wealth in the form of digital assets (tokens). They do not eliminate the risk of making a loss measured in dollars or any other government backed fiat currencies, but they allow the user to accumulate tokens over time by trading, and make it possible to eliminate the risk of making a trading loss measured in tokens.

There are four trustless, decentralized tokens, mined using Proof-of-Work. They've been designed so that their prices will cycle around each other over the course of years, allowing users to gain more tokens over time by trading the more expensive tokens for the cheaper ones. By following the rule: always trade tokens for more tokens of a different type, a trader can guarantee that the total number of tokens owned will increase with every trade.

- A trader can make a loss by buying tokens and then selling them at a lower price. *The future prices of the tokens measured in dollars cannot be guaranteed or predicted*. <u>There is a risk of loss when buying and selling the tokens.</u>
- The number of tokens owned by the trader can be made to increase with every trade, but *the value of those tokens measured in dollars is not guaranteed to increase*.
- The trader can build wealth in the form of acquiring more tokens over time, but *the trader's wealth measured in dollars is not guaranteed to increase.*
- The tokens are designed so that their prices will cycle around each other, but this depends on a model of how market prices react to changes in supply. Future market prices are not guaranteed and may behave differently.
- <u>The risk of making a trading loss measured in dollars cannot be eliminated. Only the risk of making a loss measured in tokens can be eliminated.</u>



The historical price chart above shows how the token prices have behaved since farming began at the start of 2022. As of May, 2023, the prices are cycling around each other as intended. The theoretical price chart below shows how the prices may evolve over the coming years, presuming that the market reacts to future halvings in the same way as it did to the Spring halving in June 2022, and the Summer halving in March 2023. There is no guarantee that it will, but so far, it has reacted as expected.



The cycles in the prices allow traders to accumulate tokens over time through trading. A trader who started with 5 Winter tokens could have exchanged them for approximately 8 Spring tokens before June 2022. Those 8 Spring tokens could then have been traded for approximately 13 Summer tokens just before the Summer halving in March 2023. As time goes on, those Summer tokens are expected to become the most expensive, and might be traded for 18 Autumn tokens in the future, which could possibly be traded for 23 or more Winter tokens later.

Trading the tokens in a cycle over the course of three years could potentially allow a trader to turn 5 Winter tokens into 23 or more. This outperforms the buy-and-hold strategy, allowing users to accumulate wealth over time in the form of tokens. Even though the dollar prices of the tokens are not guaranteed to increase, a trader with 23 Winter tokens has more wealth than a trader with 5.

The Simulator

The Seasonal Tokens Trading Simulator allows users to practice trading tokens for more tokens over time as the prices cycle around each other, without putting any real money at risk. More information about the 'Seasonal Tokens Trading Simulator' is available in the Simulator FAQ and additionally, in the following introductory video.

The Problem **- The Problem that 'Seasonal Tokens' is Looking To Solve?**

Cryptocurrencies offer unprecedented new opportunities for generating wealth, but nearly all cryptocurrency based projects are based on speculation. Buyers hope to profit by predicting how the market prices will change over the short to long term, and these predictions may be correct, but also, may be incorrect. Trading or holding these speculative assets is effectively gambling and carries a high risk of loss. The proliferation of cryptocurrencies over the last few years has produced enormous profits for some, but has left a much larger number of people with large losses.

Cryptocurrency investors are forced to gamble, and this transfers wealth from poorly-informed outsiders to insiders who have better information. The problem that needs to be solved is to remove the gambling aspect from cryptocurrency trading, so that it's possible to build wealth over time without speculating on the future occurrence of uncertain events. A system of cryptocurrencies is needed that allows users to steadily build wealth without relying on the expectation that someone else will buy those assets later at a higher price.

The Solution **- The 'Ethical & Non Speculative, Wealth Creation Tool'**

Seasonal Tokens constitute an 'Ethical & Non-Speculative Wealth Creation Tool', which allows users to accumulate wealth in the form of tokens without the need to speculate. Instead of betting on future demand, which is highly uncertain, users take advantage of the predictable changes in supply, which are programmed into the smart contracts, making them both pre-determined and unchangeable.

Because the rates of supply are completely predictable, everyone knows in advance which token will tend to be the cheapest, and which will tend to be the most expensive at a future point in time, based on how quickly they're produced. This makes it possible to trade the more expensive tokens for the cheaper ones as the prices cycle around each other, gaining more tokens in total with each trade. By always trading tokens for more tokens of a different type (e.g. trading 3 Spring tokens for 5 Summer tokens), users can eliminate the risk of ending up with fewer tokens than they started with. The number of tokens in the user's portfolio will increase over time and not decrease.

Accordingly, the tokens provide a non-speculative and risk-reducing strategy for accumulating further tokens over time. This removes the gambling aspect from cryptocurrency trading, and provides an ethical and sustainable way to build wealth, in the form of tokens, using cryptocurrency trading. The value of a trader's holdings measured in dollars or any other fiat currency, is not guaranteed to increase, but a trader who gains more tokens over time will have more wealth in tokens than a trader who doesn't, regardless of the dollar price.

Utility

Seasonal Tokens are designed with a singular purpose in mind: to serve as a long-term store of value and enable wealth building. This unique design of the tokens is based on a deep understanding of the paradox of value that has been a fundamental principle in economics since Adam Smith's seminal work, "The Wealth of Nations", where he remarked that:

> The things which have the greatest value in use have frequently little or no value in exchange; on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarcely anything; scarcely anything can be had in exchange for it. A diamond, on the contrary, has scarcely any use-value; but a very great quantity of other goods may frequently be had in exchange for it.

Understanding the Diamond-Water Paradox

This seemingly paradoxical relationship between utility and price exists because society invests resources and effort to keep the prices of essential items low. Oil would be much more expensive and difficult to obtain if it was useless, because we would not build infrastructure to make it cheap and accessible. Oil is cheap because it's useful.

Diamonds, on the other hand, are expensive, but that's okay, because nobody needs them. Society won't spend any resources or effort trying to make diamonds cheaper.

We Demand Cheap Utility

Utility can generate demand and drive asset prices up, but the effect is temporary. We don't just demand utility, we demand cheap utility. We demand cheap food, cheap oil and cheap water. But we don't demand cheap diamonds. It doesn't do any harm if diamonds are expensive.

The essential point is this: <u>If something is very useful, it's going to be cheap in the future.</u> We demand it.

The Paradox Applies to Cryptocurrencies Too

Ethereum is very useful, because it can be used to interact with smart contracts. When the cost of Ethereum transactions rose due to demand, society reacted. New blockchains were developed and deployed to make it cheaper to use smart contracts. Solana, Cardano, the Binance Smart Chain, Polygon and other competitors appeared and have taken about 25% of Ethereum's market share.

Bitcoin, on the other hand, has lost about 5% of its market share to competing proof-of-work coins. There is no demand for Bitcoin's utility at a lower price, because Bitcoin has no utility apart from being a store of value.

Seasonal Tokens: Designed for Building Wealth and Nothing Else

Nobody needs a diamond, a Bitcoin, or a Seasonal Token. The prices of the tokens aren't going to suffer from the long-term downward pressure that comes from society's demand for cheap utility. The tokens can be very expensive, and nobody will be harmed or inconvenienced. Instead of squeezing money out of people by throttling their access to something they need, the increasing scarcity of the tokens is what makes them a store of value. They were designed to have no more utility than diamonds, because if they were as useful as water, they would inevitably become as cheap as water.

Ethical Aspects of Seasonal Tokens

- ***Reducing Risk***
  There is a risk of making a loss measured in dollars, because the dollar prices of the tokens could decrease. However, a trader who turns 5 tokens into 10 tokens by trading is less likely to make a loss than a trader who simply holds the 5 tokens. When the tokens are used for their intended purpose, the risk of making a loss decreases.

- ***Profit Without Inflicting a Loss***
  There is no need to inflict a loss on another trader in order to make a profit. By trading tokens for more tokens over time, traders take advantage of the changing rates at which new tokens are produced. They don't take tokens from other traders.

- **Removing Speculation**
  Traders who want to accumulate bitcoins and dollars over time by trading between them must bet on future price changes. They risk ending up with fewer dollars and bitcoins. Traders who accumulate tokens by trading expensive ones for cheaper ones, do not need to bet or speculate, and can eliminate the risk of ending up with fewer tokens.

- **Rewarding Patience**
  Users can benefit from the tokens by patiently holding them for a period of nine months, and then trading them for the next token in the cycle.

- **Fair Distribution Method**
  The tokens can only be produced by mining. Even the founders of the project need to buy or mine tokens to acquire them, just like the rest of the community.

- **Transparent & Decentralized**
  Nobody has any more control over the tokens than anyone else. All of the tokens that exist are mined, and the proof of work is publicly visible on the Ethereum blockchain.

Market Price Model

The prices of the tokens are intended to cycle around each other due to changes in supply. Once every nine months, the rate of production of one of the tokens is halved, and the market price of that token is expected to increase relative to the other tokens over the subsequent months. Analysis of the price history has shown that, after each halving, the prices have moved approximately 1% daily towards their new target ratio based on the rates of production. However, there is no guarantee that prices will behave this way in the future.

The theoretical price chart and the prices used in the simulator are based on the assumption that the prices will continue to behave this way. The prices of the tokens measured in dollars will depend on demand and accordingly, if the tokens become more popular, then the dollar prices may rise. On the other hand, if they become less popular, then the dollar prices may fall. Changes in demand are not necessary for the tokens to cycle around each other in price, because this effect is driven by supply.

Seasonal Tokens - Value Proposition

1. Predictable Price Rises

Four tokens - Spring, Summer, Autumn and Winter - have been designed to increase in price relative to each other in a predictable sequence that repeats itself. Spring will tend to go up in price, then Summer, then Autumn, then Winter, then Spring again. It's the times of the price rises that are predictable, when that time comes, the price is expected to rise, based on the decrease in supply. That said, future prices can not be guaranteed, in any event.

2. Designed for Seasonal Trading

Trading is profitable if the assets you buy rise in price after you buy them and before you sell them, knowing when to buy and when to sell is the hard part of trading. Seasonal Tokens make this easier, as tokens that will tend to rise in price next can be bought, and then traded for the next token in the cycle after the price has risen. By participating in the seasonal trade of the tokens, a buyer can continually increase the total number of tokens that he or she owns over time.

3. Designed for the Long Term

Unlike short term pump-and-dumps, that are effectively driven by crowd behavior, the Seasonal Tokens are designed to rise in price over the course of many months, driven by long term changes in supply and demand. Reduced mining supply, and increased farming demand, for each token, are allowed to affect the market for nine months, putting a sustained upward pressure on the price, after which the next token in the cycle goes through the same process.

4. Seasonal Supply and Demand

Tokens are produced by mining, and are used for trading and farming. The relative supply of the four tokens is controlled by mining, and the farm creates demand for the tokens in specific proportions. Rules have been arranged so that each token will face a combination of higher demand and lower supply over the period when its price is intended to rise in comparison to the others. When a token is "in season", it's programmed to be produced at the fastest rate of the four, and when it goes out of season, it's produced at the slowest rate. Four months after a token goes out of season, the potential demand from farming increases. The farm switches from paying out the least for that token to paying out the most.

5. Seasonal Tokens - Use Cases

Seasonal trading
By holding Spring tokens while their price rises in comparison to the others, and then trading them for Summer tokens, and holding them while their price rises, and so on, a trader can always hold a token whose price is tending to rise relative to the others, allowing them to increase the number of tokens they own over time.

Farming
A buyer with Spring tokens, can use them to provide liquidity and then stake that liquidity position in the farm. That buyer will then receive Spring, Summer, Autumn and Winter Tokens, for as long as the liquidity is left in place. 9% of tokens mined are distributed to farmers.

Donating to the farm
Donating tokens to the farm helps to support the value of the tokens by incentivizing liquidity providers. The farm also contributes to the rotating demand for the tokens, which helps to maintain the cycles in the prices. So donating tokens to the farm supports the token ecosystem.

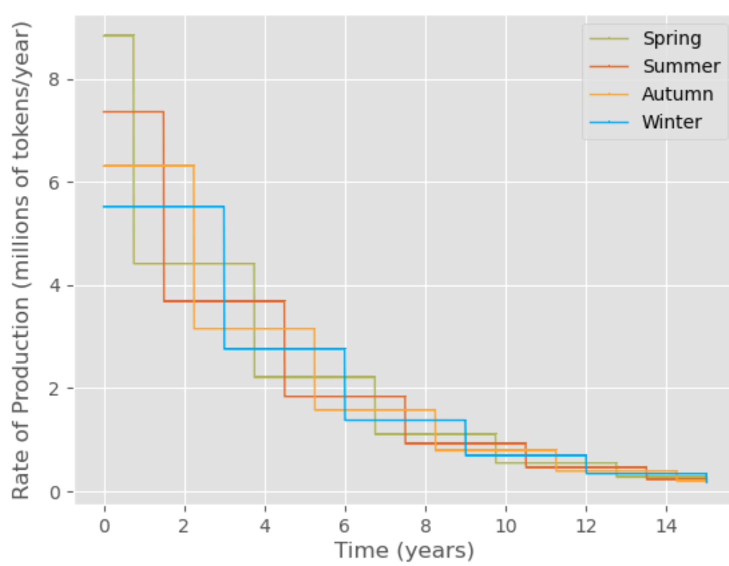
6. Seasonal Mining Supply

Miners earn rewards of newly-mined tokens every ten minutes on average. The number of tokens per reward are shown in the table below. Mining started on the 5th of September, 2021 and Spring tokens were in season. Nine months later, the size of the Spring reward dropped to 84 tokens. Spring tokens went out of season and became harder to acquire over time. Summer tokens were then produced at the fastest rate until the 6th of March, 2023, after which the Summer reward halved to 70 tokens.

		Spring	Summer	Autumn	Winter
September	2021	168	140	120	105
June	2022	84	140	120	105
March	2023	84	70	120	105
December	2023	84	70	60	105
September	2024	84	70	60	52.5

Since the Summer halving, Autumn tokens have been produced at the fastest rate of the four and have become the cheapest token. This is expected to continue until the Autumn halving in December 2023. The Winter reward of 105 tokens will then be the largest of the four, until the Winter halving occurs and the Winter reward drops to 52.5 tokens. When Winter tokens go out of season, Spring will once again be the token produced at the fastest rate.

The chart below shows how the rates of production of the tokens change over time. Approximately 37 million tokens of each type will be produced in total.



Islamic Finance Compatible

The Seasonal Tokens themselves, and the seasonal trading strategy of wealth generation, have been designed from the start to be compatible with the requirements of Islamic finance:

- Interest (*riba*): The tokens and the strategy of seasonal trading involve no interest on loans because there is no lending involved at all.
- Forbidden (*haram*) goods or activities: Nothing forbidden in Islam (such as pork or alcohol) is produced, because the tokens themselves are commodities like gold or Bitcoin, and holding or trading them generates no other products at all.
- Speculation (*maisir*): The expectation that users can increase their holdings over time does not come from betting that an uncertain event will occur in the future. It comes from fully predictable and predetermined events (halvings) scheduled by smart contracts that can never be changed.
- Risk (*gharar*): The system has been designed to completely eliminate the risk of ending up with fewer tokens. When a trader trades tokens for more tokens of a different type, the total number of tokens owned is a number that goes up and never goes down.

Independent Analysis

An independent financial expert, has conducted an analysis of the 'Seasonal Tokens' token economics and has compiled a report, which is available for all potential partners, our community and the general public to view here: https://www.svedbergopen.com/abstract/37/380/Vol.3-Issue.1-June%202023

Artificial Intelligence (AI) Analysis

GPT-4 has demonstrated that it understands the concept of the 'Seasonal Tokens', and has characterized the tokens as:

- a tool for building wealth,
- a financial innovation,
- an accessible investment option
- a risk management tool, and
- a long-term investment strategy.

Additionally, GPT-4 has stated the following:

- The concept "is unique and has not been observed in previous financial markets."
- The concept "seems to be a more innovative and intentional approach to creating cyclical trading opportunities."
- It "seems that the creation of seasonal tokens is ethical. The tokens are designed with transparency, fairness, and financial inclusion in mind", and
- "Seasonal tokens seem to align with ethical requirements of Islamic finance."

NB: It's important to note that GPT-4 is a new technology and has been known to make reasoning errors and false statements.

Product Launch

Product Launch - After a successful first audit in Q3 2021 of the smart contract code, which was completed and no apparent security issues found, our team began a phase of public testing before launching the 'Seasonal Tokens' on Ethereum's main network. A bug bounty was offered to anyone who could find a security issue with the smart contracts. During the public testing period, a second audit was conducted, which again revealed no apparent security vulnerabilities. Accordingly, the tokens were deployed and mining began on the 5th of September, 2021. Since then, the community of miners, traders and farmers has grown, and the tokens are now listed on all major token-tracking websites, including **CoinMarketCap** and **CoinGecko**. Over the following year, the tokens were listed on two centralized exchanges, **CoinsBit.io** and **CoinStore.com**, and have received widespread global media coverage.

Media Partners & News

Media Partners

- **https://news.bitcoin.com/**
- **https://cointelegraph.com/**
- **https://www.benzinga.com/**
- **https://www.msn.com/**
- **https://www.nasdaq.com/**
- **https://medium.com/authority-magazine**
- **https://finance.yahoo.com/**
- **https://blockmagnates.com/**
- **https://hodlershub.com/**

Media Articles & Coverage

A complete list of all Media articles and coverage, can be located and found here - https://seasonaltokens.org/coverage

Key Project Highlights

1. *July 2021* - Seasonal Token smart contract code is written.
2. *August 2021* - Audits of the Seasonal Token smart contracts are completed.
3. *September 2021* - Mining begins.
4. *November 2021* - Farm contract is audited.
5. *January 2022* - Farming begins.
6. *March 2022* - Media Campaign Begins.
7. *June 2022* - Spring halving.
8. *September 2022* - Interview at Nasdaq Headquarters in New York City.
9. *October 2022* - Farm payout for Spring liquidity increases.
10. *November 2022* - Trading Simulator is Developed.
11. *December 2022* - Polygon Farm is Deployed.
12. *March 2023* - Summer halving.
13. *July 2023* - Farm switches to paying out most for Summer liquidity.
14. *December 2023* - Autumn halving.

The Seasonal Tokens Community

The community has grown on Discord and Reddit, and the community leaders are listed on our website: https://seasonaltokens.org/community

To meet the community, please join us on Reddit and Discord.

Our Approach to Environmental Issues Related to Proof-of-Work Mining

Although the tokens were launched in 2021, prior to the passage of the EU's Market in Crypto-Assets regulation (MiCA), which requires proof-of-work projects to declare their approach to environmental sustainability, the tokens were designed with a specific vision of the long-term sustainability of mining and its environmental impact.

There are two independent aspects to the environmental sustainability approach taken in the tokens' design:

1. Proof-of-work is used only for mining new tokens. It is not used to secure the blockchain or validate transactions, since the Ethereum blockchain handles those tasks.
    a. Unlike most other proof-of-work cryptocurrencies, the amount of energy consumed in the mining of Seasonal Tokens does not need to be large.
    b. As of September 2023, the total amount of energy consumed by mining is estimated at around 2,000 Kilowatt-hours per day, comparable to about 60 households.
    c. A typical proof-of-work blockchain would not be secure with such a small amount of energy consumption. If the tokens used proof-of-work for security, then efforts would have been made to increase the energy consumption.
    d. The design of the tokens has therefore reduced the rate of energy consumption in comparison to other proof-of-work cryptocurrencies.
2. The mining algorithm used by the tokens (Keccak) is ASIC-friendly. This means that specialized mining hardware is much more efficient than home computers at mining the tokens.
    a. The superior performance of ASICs ensures that, should the tokens become very expensive in the future, energy producers will have a large advantage over energy consumers when mining.
    b. Presuming that the tokens rise in price significantly in the future, mining will tend to become centralized at power generation plants, who can use generated energy that can't be stored or sold to mine the tokens and cover some operating costs, making it cheaper to produce electricity.
    c. This is how Bitcoin's mining industry is progressing, and the tokens have been designed to follow the same path. By contrast, Ethereum previously used a non-ASIC-friendly mining algorithm, resulting in most mining being done using consumer hardware, consequently increasing energy demand without affecting the supply.
    d. Renewable energy sources such as geothermal energy can be used to power ASICs for mining without harm to the environment.
    e. Large, centralized mining operations using ASICs at power generation plants can be regulated by governments to ensure environmental sustainability, whereas non-ASIC-friendly mining performed on home computers is almost impossible to regulate.

Disclaimer

This white paper is provided for informational purposes only and is not intended to constitute an offer to sell, a solicitation of an offer to buy, or a recommendation or endorsement of any Seasonal Tokens or any related products or services. The information presented in this white paper is of a general nature and should not be construed as investment advice or as a guarantee of future prices or performance.

Seasonal Tokens is a decentralized project with no central authority, governance, or management. It is not an enterprise or business, and the smart contracts associated with the project cannot be changed or modified once deployed. The functionality and value of Seasonal Tokens are determined solely by the trustless nature of the smart contracts and the laws of supply and demand.

Potential participants in the Seasonal Tokens ecosystem should conduct their own research and assessment of the project and consult with independent legal, financial, or other professional advisors before making any decisions based on the contents of this white paper. The authors, contributors, and any affiliated parties disclaim any responsibility or liability for any loss, damage, or adverse consequences resulting from the use of, reliance on, or any actions taken based on the information provided in this white paper.

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