

# S | G | M | O | D

A bond based monetary model



# I N D E X



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# ERC659 Bonds



The accelerator of DEFI 2.0

an universal standard replaces current  
ERC(BEP)-20 LP token. Allowing more  
sophisticated allocation systems  
to be designed.

# ERC659 Bonds

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In DEFI 1.0, the liquidity provider will receive an ERC(BEP)-20 token as a mathematical proof of the loan to the bank. Holding the LP tokens will guarantee that the investors will get their assets back. What Sigmoid propose is to instead of issuing an ERC(BEP)-20 LP token, we will give the provider a ERC(BEP)-659 bond when deposit. The ERC(BEP)-659 bond has more parameters, which allow more sophisticated allocation systems to be created.

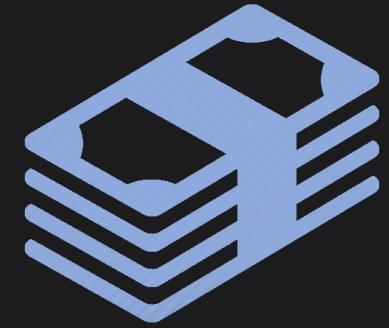
[Learn more](#)

# DEFI 2.0

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600 B.C.  
**Coins**  
**Precious Metals**



700 A.D.  
**Banknote**  
**Fiat Money**



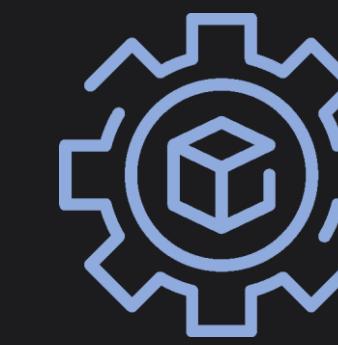
2008  
**Bitcoin**  
**Block chain**



2015  
**Smart Contract**  
**ERC-20**



2019  
**DEFI**  
**Yield Farming**



2021  
**Layer 2**  
**ERC659 Bonds**

ERC(BEP)-659 Multiple Callable Bonds Standard, is the answer to many essential problems that DEFI faced right now.

A large, dark, abstract geometric background consisting of a triangular mesh pattern, occupying the left half of the slide.

# MERCENARY PROBLEM

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Yield farming wish to create a use case for digital currencies. When liquidity providers deposit digital currencies into the liquidity pool, they are effectively lending a loan to the bank. In return, Yield farming protocols will reward the providers with interest and units of their own token. The protocols lure the investors to keep staking tokens, by giving them more allocation.

What dangers about this, is what we called mercenary problem. The early liquidity provider works like mercenaries, attracted by the high interest rate of Yield farming. The protocol will use the liquidity of the mercenaries to attract more investors. When the first liquidity provider can't gain more interest from the protocol, they will simply take their liquidity away from the IP and sell all the rewarded protocol token. Like during the Dutch Tulip mania, when the market starts to show the indices of recession, the inevitable collapse happens spontaneously.

# WHY ERC659 BONDS

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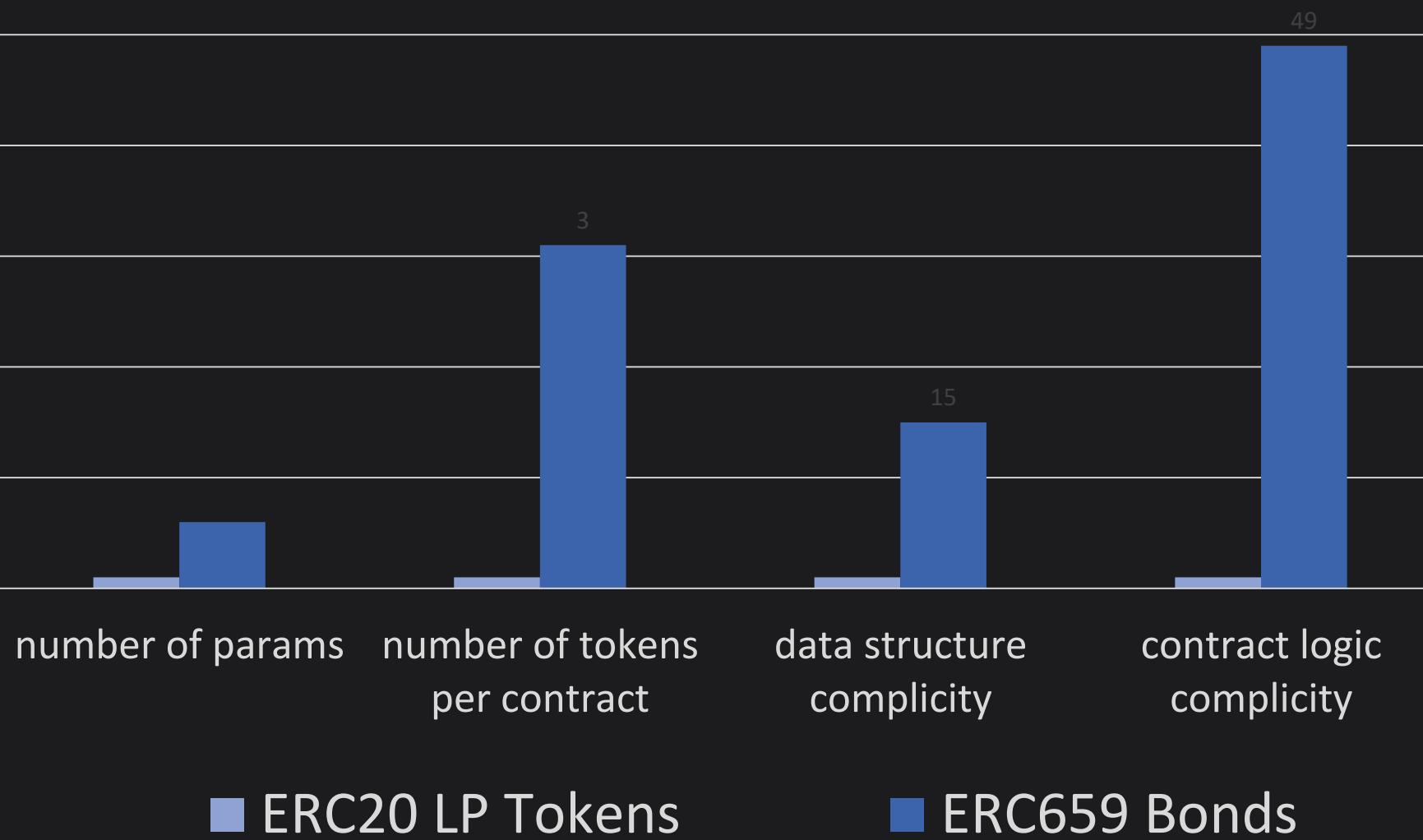


## Multiple tokens per contract

Existing LP token standards like ERC-20 require deployment of separate factory and token contracts per token type. ERC-659 Multiple Callable Bonds Standard allows for each bond class ID to represent a new configurable token type, and each bond nonce represents an issuing date or any other forms of data in uint256.

## Data structure complicity

Current ERC20 LP token has not much complicity in data structure. To allow more complex allocation and redemption logic to be built, we need a new LP token standard that can manage multiple bonds, stores much more data and gas efficient.



# A universal Bond standard for DEFI 2.0

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[ERC\(BEP\)-659](#) enables any token to issue their own bonds, and allow those bonds to be read and traded on our Bonds DEX. Bond issuer will gain more control on the conditions of redemption. The competition of bonds will allow the market to find a better suited allocation system.

We believe that this bond mechanism is the answer to the mercenary problem. Before providing the liquidity, the mercenaries (liquidity providers) sign a commitment that they must obey. Mercenaries though still lured by profit, now must guarantee their service (liquidity providing) for the protocol.

[Learn more](#)

# Sigmoid Bonds DEX

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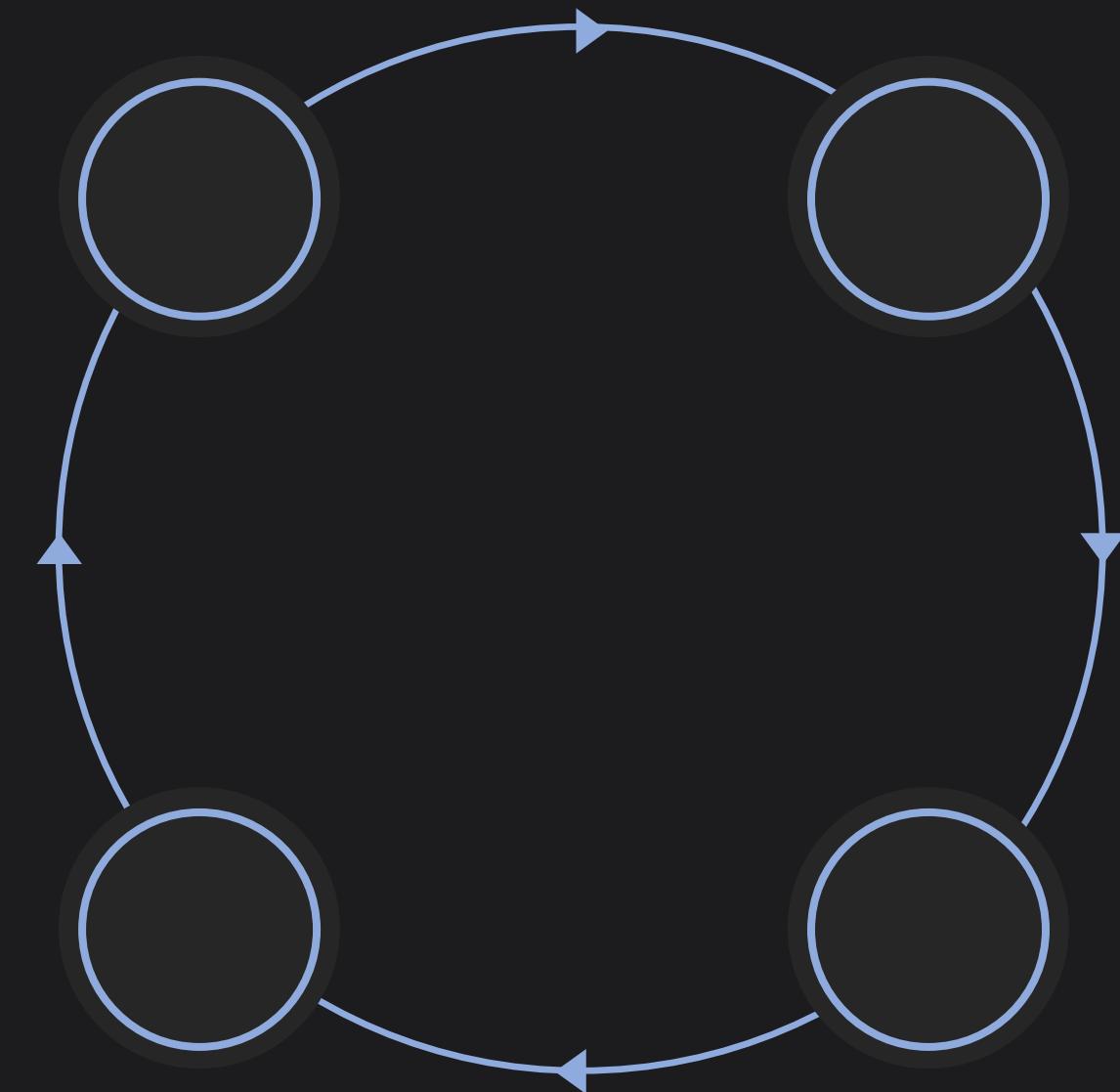


## SASH is the circulating currency

ERC659 standard bonds can be traded on Sigmoid bonds DEX, using SASH as the only circulating currency.

## ERC659 bonds can pledge SASH

Sigmoid bonds DEX use Dutch auction methods (Auction begins with an asking price higher than the final price). The bidder must deposit SASH to make any orders. This will make the circulating supply of SASH to decrease, and increase the market demand of SASH.



## Sigmoid is the standards maker

The reading of ERC659 standard bonds requires new infrastructures. Sigmoid frontend can provide such services, Be the first one to provide a service we will have a brief monopoly on bonds

## Sigmoid bonds DEX is not only for SASH

Any ERC659 bonds can be traded on our secondary market. Other projects can only fork our exchange. Bonds from different tokens, with different redemption date, can be packed into packing loans.

# FUTURE IN THE MAKING



ERC(BEP)659 standard and Sigma bonds exchange open a whole new market for investors and speculators alike. In this market of limitless potential, SIGMA protocol is the first standard maker.

In 2020 USD bond accounted as 132.5 % of the country's Nominal GDP (\$20.93 trillion) in Dec 2020.

The DeFi Total Value Locked is \$52.1B. If we esteem that the DeFi bond market is 1.3 time of the TVL,

**The estimated DeFi bond market size will be \$ 70.3B**



# SIGMOID CASH

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Aim to be the medium of indirect exchange in DFI  
market, universally recognized and trust.



# S A S H

(Sigmoid Cash)



## Features

- SASH (sigmoid cash) is a new generation algorithmic sustainable stable-coin.
- The price of SASH has the tendencies to return to a projected price.
- The MA value of SASH to USD will always increase. It has no upper limit.
- SASH is Death Spiral resistant. SASH has his own economic cycle, it can always recover from recession.
- For start SASH is only partially pledged by USD, SASH bondholders will never suffer from permanent loss.
- The minting of SASH applies Fisher's quantity theory of money ( $MV=PT$ ).

# SASH PROJECTED PRICE



## Features

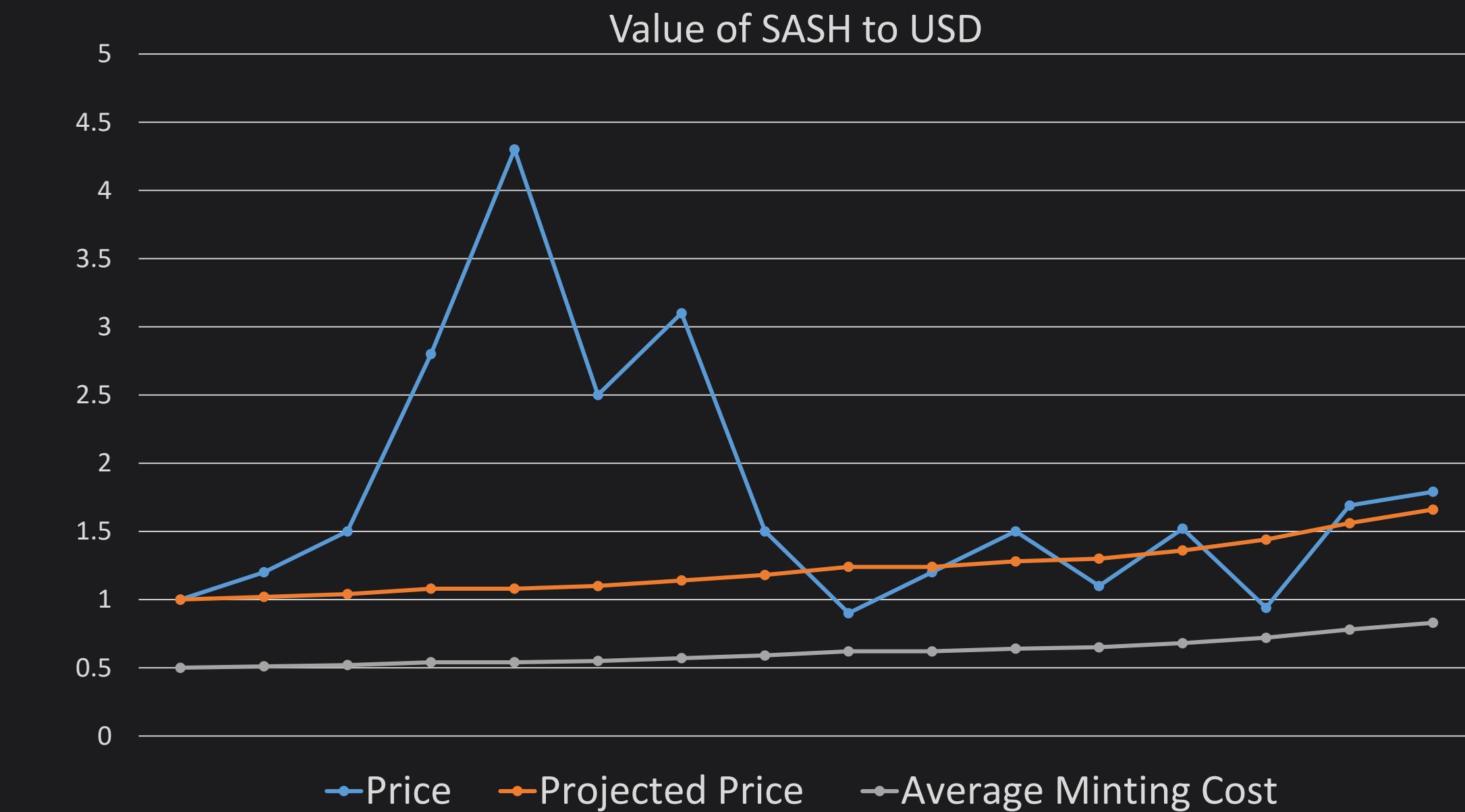
When someone perches SASH bond with USD, protocol will mint a certain amount of SASH to the LP contract (according to projected price). In the same time, the USD based stable-coin will be sent to LP contract. It serves as a pledge of the SASH minted.

$$\text{projected price (P)} = 1.1^{\log_{\phi}(\text{totalSupply(SASH)}/100000)}$$

$$p = 1.1^{\log_{\phi} T}$$

The lower limit of SASH depends on the average minting cost of SASH. Average minting Cost(C) is calculated from the sum of the total value of every SASH bonds issued(Quantity\*Price)dived by the total number of SASH bonds issued.

$$C = \frac{\sum_{k=0}^n Q_k P_k}{\sum_{k=0}^n Q_k}$$



\*The price of SASH has the tendencies to return to the projected price.

\*\*the price of SASH will never fall under Average Minting Cost.

\*\*\*the real price of SASH is decided by the market.

# MINTING OF SASH

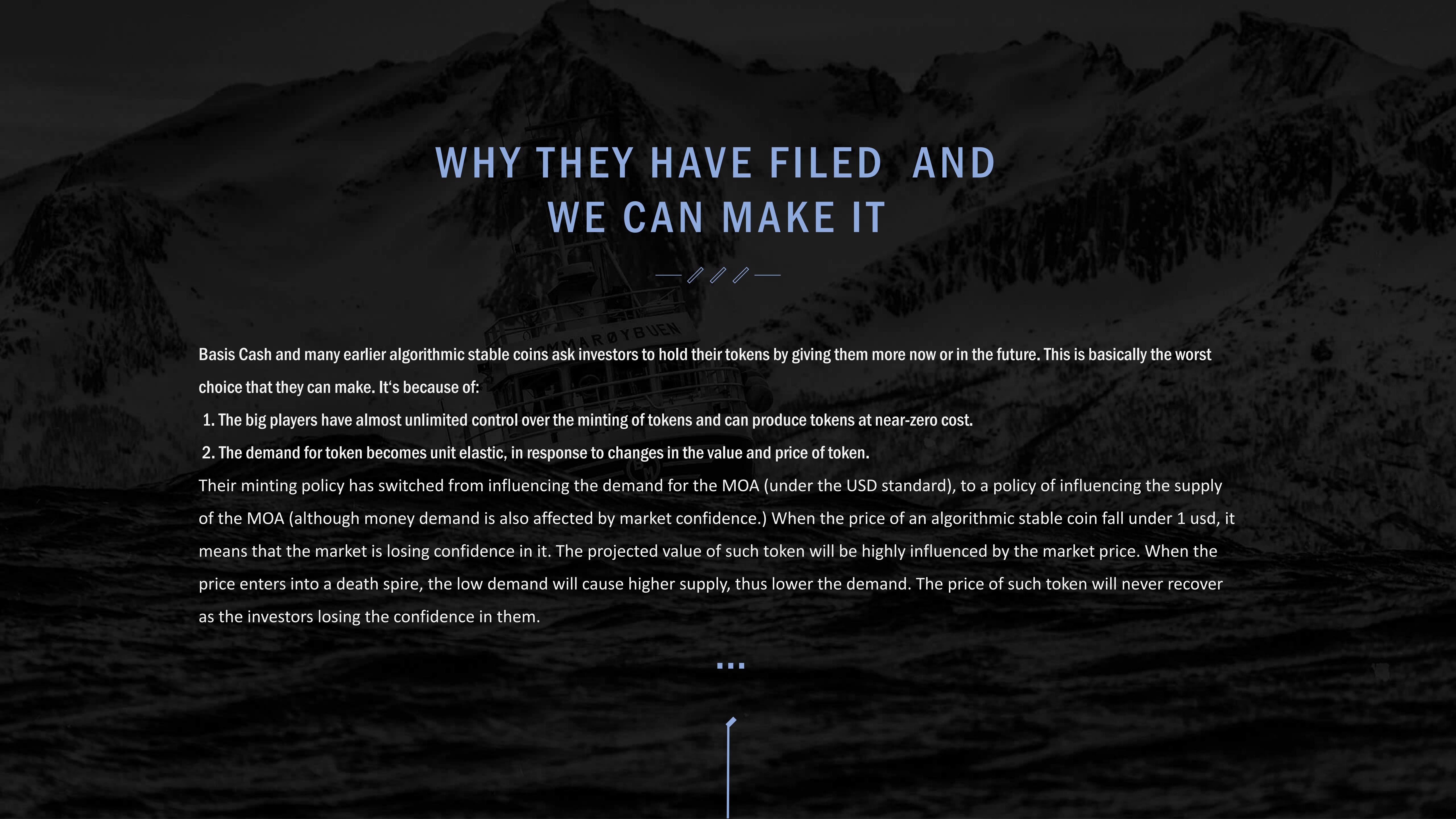


SASH is a model of a competitive decentralized money. In this model, the supply of the currency (SASH) is regulated by an algorithm, in consideration of the market demand, velocity, price, and exchange rate. Our model is built upon a set of economic rules, which will allow our system to always recover genuinely from recession.

SASH is bond based. The only way to mint SASH, is to deposit some pledge into a bank contract. By doing so the investor will receive SASH bond. Those bonds can be progressively redeemed. When the redemption happen, bondholders will receive SASH reward and their principal.

[Learn more](#)

# WHY THEY HAVE FILED AND WE CAN MAKE IT



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Basis Cash and many earlier algorithmic stable coins ask investors to hold their tokens by giving them more now or in the future. This is basically the worst choice that they can make. It's because of:

1. The big players have almost unlimited control over the minting of tokens and can produce tokens at near-zero cost.
2. The demand for token becomes unit elastic, in response to changes in the value and price of token.

Their minting policy has switched from influencing the demand for the MOA (under the USD standard), to a policy of influencing the supply of the MOA (although money demand is also affected by market confidence.) When the price of an algorithmic stable coin fall under 1 usd, it means that the market is losing confidence in it. The projected value of such token will be highly influenced by the market price. When the price enters into a death spire, the low demand will cause higher supply, thus lower the demand. The price of such token will never recover as the investors losing the confidence in them.

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Quantity Theory of Money (QTM)

# I S O U R A N S W E R S

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According to the Quantity Theory of Money, when the rate of inflation rises, the nominal interest rate rises by the same amount. The real interest rate stays the same. In brief, Sigma protocol is able to balance the circulating speed and inflation rate of SASH (Sigma Cash). SASH will be mint when the market demands more, and vice versa.



# SUSTAINABLE

The ultimate goal of SASH is being sustainable and trusted. The price of SASH will reflect the market confidence of DEFI.

SASH bonds work like national debt. The bondholders get profit from the expansion of the market. And like any economic cycle, when the market is in recession, the low circulating speed of money will make debt more difficult to claim.

Bonds of those debts will be less wanted in the secondary market. In the case of SASH bonds, because of the value of the pledge token locked in the LP, speculators will much willingly buy bonds from desperate earlier bond investors at a very low price.

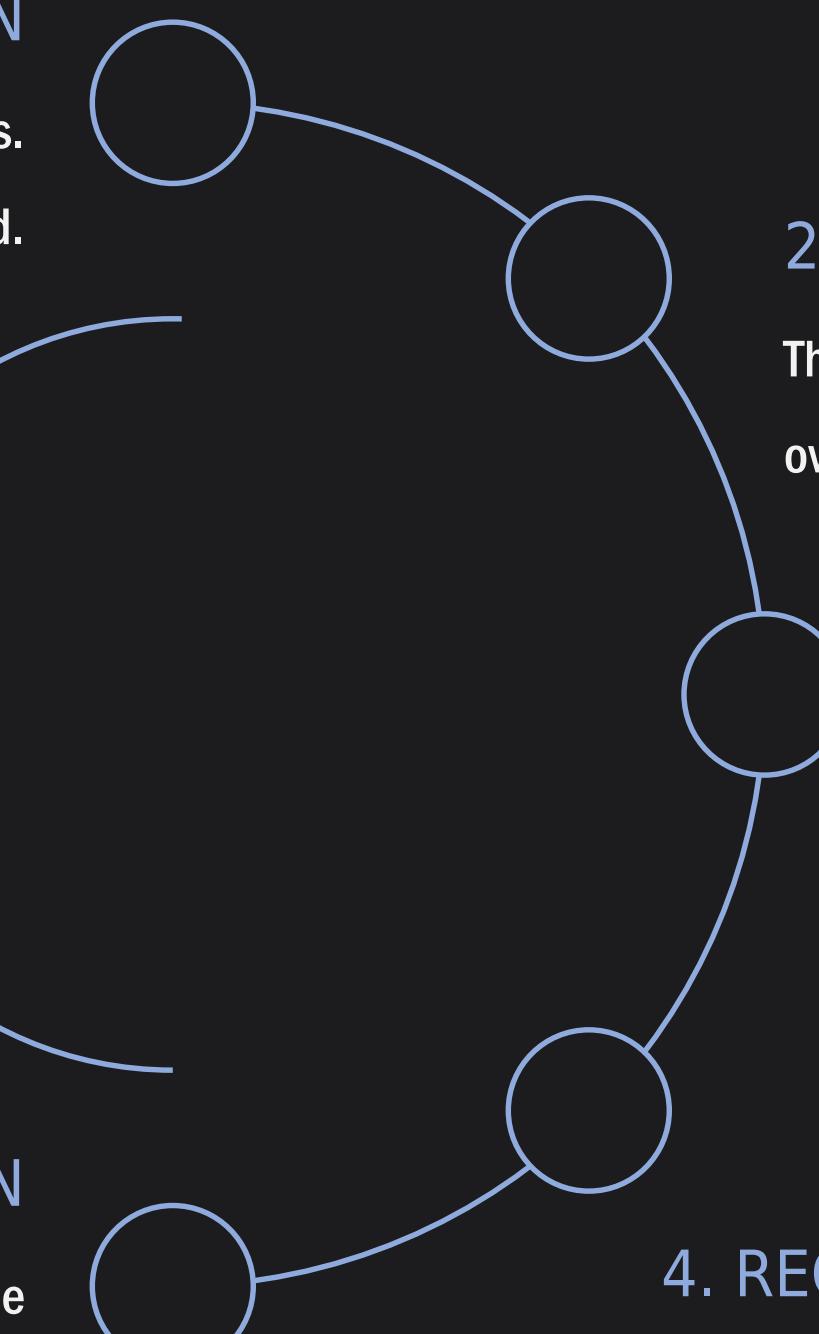


# SASH ECONOMIC CYCLE



## 1. EXPANSION

Increase in tokens and prices, low interest rates.  
New investors and money Pouring into SASH bond.



## 2. BOUBLE

The market is dangerously over-expanded, and the over-buying is everywhere.

## 3. CRISIS

Token prices crash and multiple tokens returns to nearly zero value.

## 6. RECOVERY

Bond market recovers because of that the bonds are overly sold. Market will regain confidence because the increase in value of SASH.

## 5. SPECULATION

Whales will come into the game, collect low cost bonds. Because SASH is the only circulating currency in Sigmoid Bond market, the market demand of SASH will increase.

## 4. RECESSION

Velocity of money decrees, less people will buy SASH bond. SASH bond becomes more and more difficult to redeem.  
The value of bonds in secondary market will also decrease.

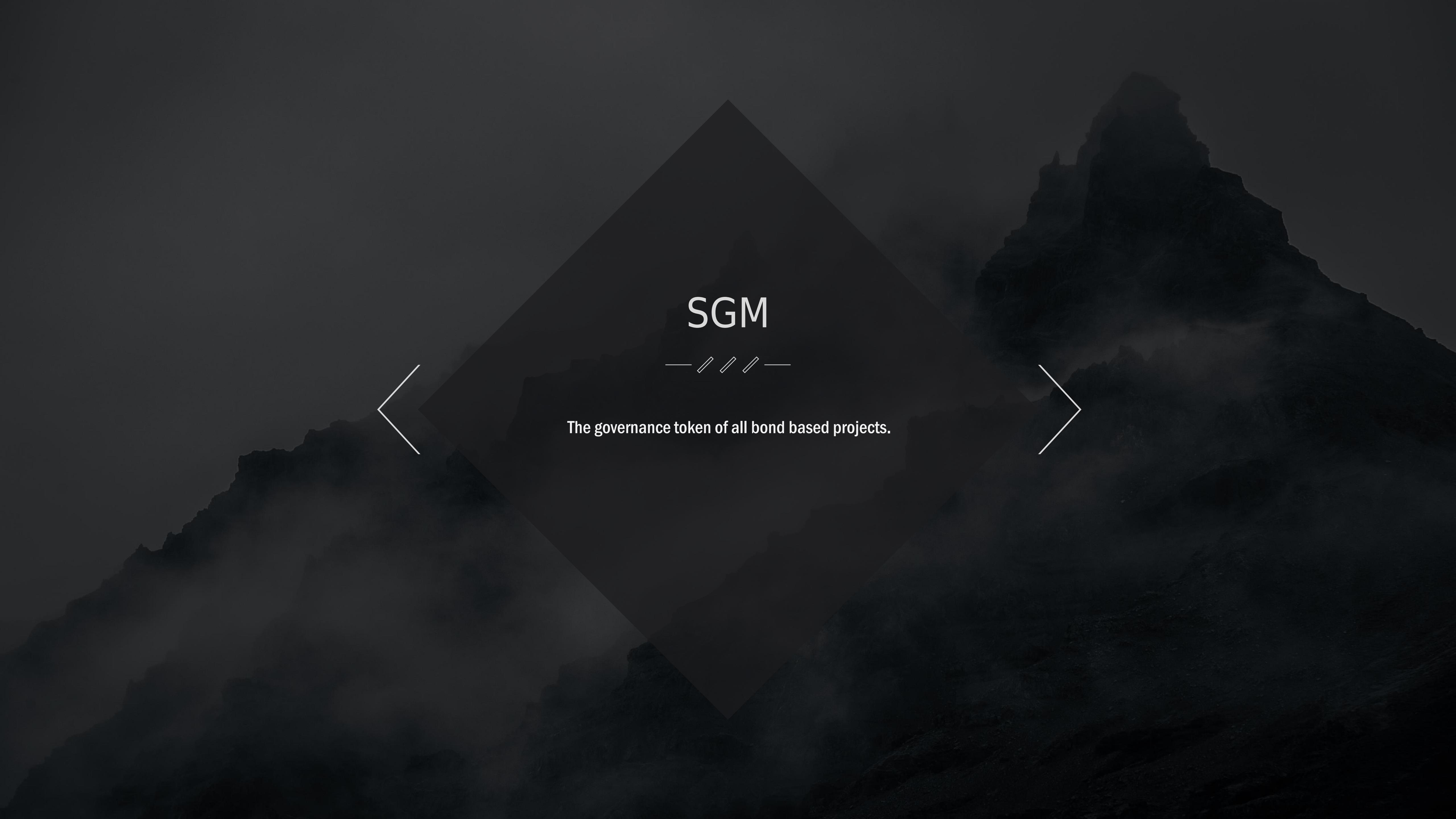
# HOW FAR CAN SASH GO

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The partial pledge of SASH by USD will be more or less like the gold standard of British pound, which was abandoned in the 20th century. For start the price of SASH is backed by USD.

This lower limit will keep rising as more SASH are being minted. When the SASH Bonds market is big enough, other tokens like ETH or BTC can also be used to buy SASH.

SASH will be the principle settlement currency in DeFi market. The low velocity market of SASH to fiat money will make SASH universally recognized and trust in DeFi market.



# SGM

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The governance token of all bond based projects.

# S G M

(Sigmoid Governance)

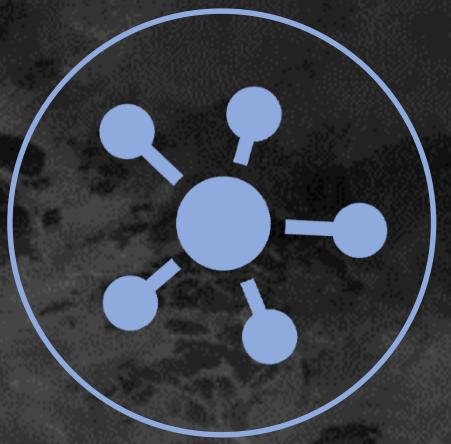


## Features

- SGM is the community governance token of Sigma protocol and other projects built with Sigma DAO.
- Staking SGM votes for any project will generate SASH reward.
- The price of SGM will never fall under their average minting cost.
- The MA value of SGM to SASH will always increase as more SASH being minted. It has no upper limit.
- For start SASH is partially pledged by USD, SASH bondholders will never suffer from permanent loss.
- Investors of SGM will have no permanent loss

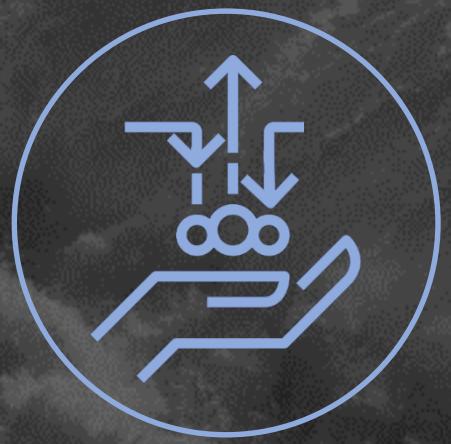
# S I G M O I D D A O

A Truly Decentralized Governance Tool and launch PAD



## Truly Decentralized

Every single proposal needs to be converted to a smart contract. Any voting for modification, update and the spending of community treasury is on chain transactions.



## Allocation System

the dev team and private round investors will no longer poses a fixed number of tokens. Instead, for every SGM and SASH minted they will receive a part of the stamp tax as their allocation.



## launch PAD

Through a fundraising campaign, Sigma DAO community can raise SASH to provide liquidity for other projects how choice to launch on Sigmoid DAO.

# SGM MINTING POLICY

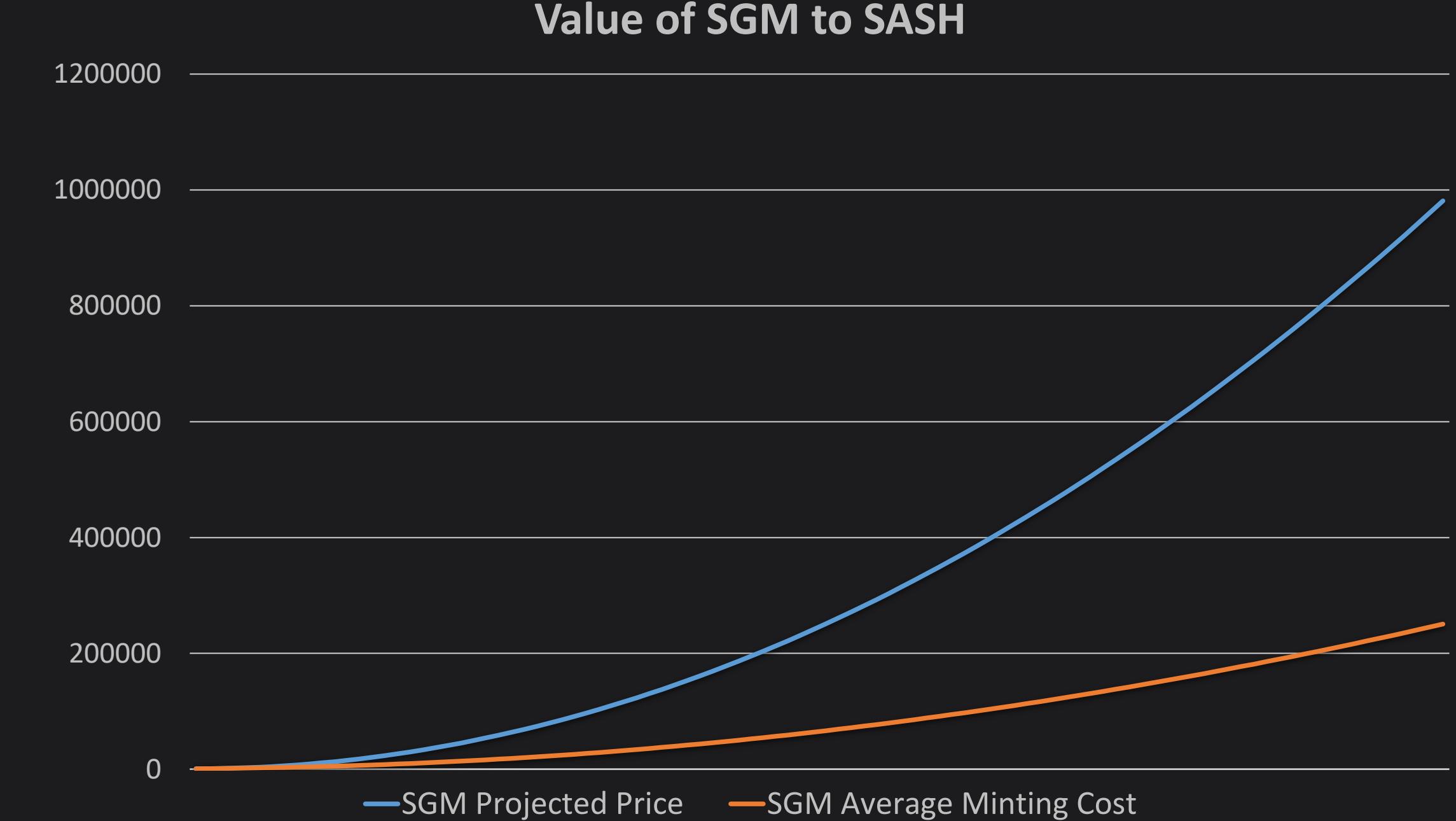


## Features

When someone buy SGM bond with SASH, protocol will mint a certain amount of SASH to the LP contract (according to projected price). In the same time, SASH spent will be sent to LP contract. It serves as a pledge of the SGM minted. And SASH is partially collateralized by USD.

projected price (P) =

$$(\text{totalSupply(SGM\_contract)} * 1,000,000 / \text{maximumSupply(SGM)})^2 / 1,000,000$$



\* The Maximum supply of SGM is 1,000,000

\*\* The price of SGM to SASH has the tendencies to return to the projected price.

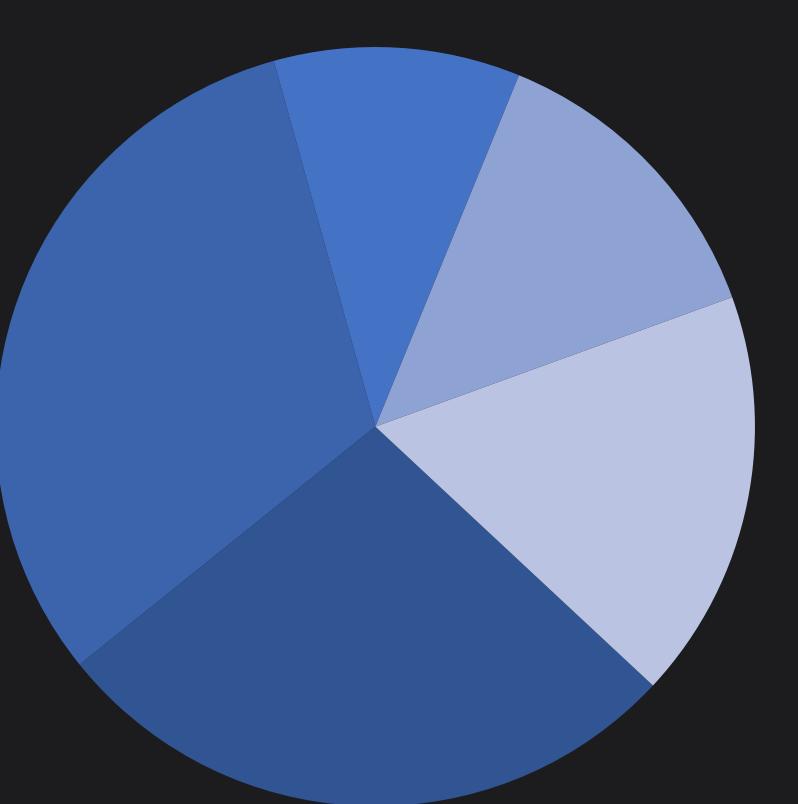
\*\*\* The price of SGM will never fall under Average Minting Cost.

# SGM and SASH Circulation

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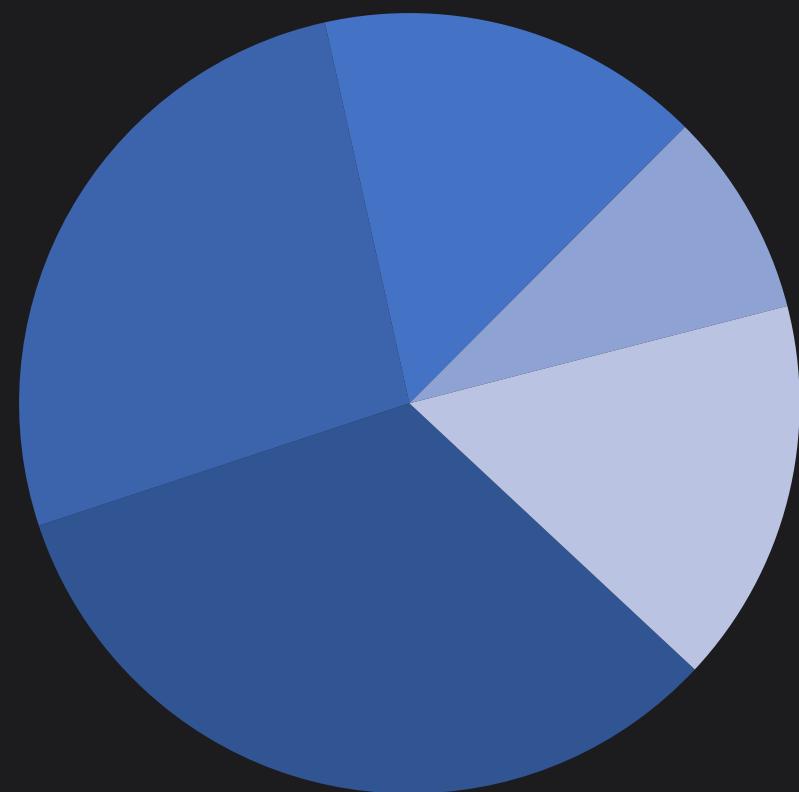
SASH

- Locked in SASH-USD LP
- Locked in SGM-SASH LP
- Locked in Sigmoid Bonds DEX
- Locked in other LPs
- In circulation



SGM

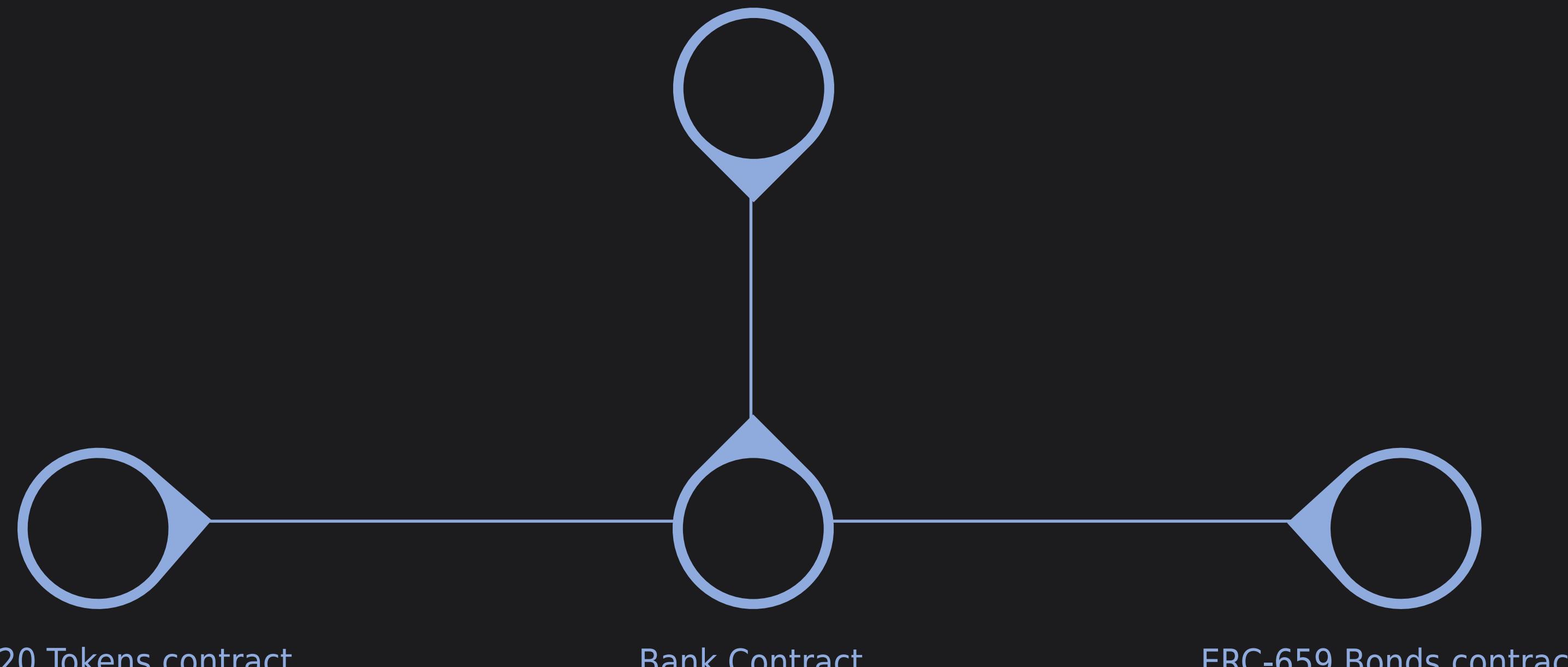
- Locked in SGM-SASH LP
- Locked for Vote
- POS for referral allocation
- Locked in other LPs
- In circulation



# G O V E R N A N C E



Governance Contract



# OUR TEAM

We are the firm believers of a decentralized future, where no states and big organizations will be able to dictate how we will live.

The real tragedy of our century is that when the promise of an equal society is still echoing in the ear, we are witnessing the biggest wave of social polarization since the invention of money.

We want to find an answer to all those social and economic questions. We are anonymous because we believe in our motto:

**CODE IS LAW!**



Yohji S  
Architect  
Solidity Engineer

sociology researcher in PSL  
Paris,FR



Hiii  
Contract Security  
Solidity Engineer

grap.finance dev



Cyberspace Administration  
of China (CAC) officer  
Beijing.CN



# Why are we doing this?

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We can regard the coming of the centralization of wealth as an unavoidable result of the evolution of the relation of production. But one must at least concede to the fact, that the distribution mechanism must advance with the invention and application of newer technologies and the mode of production. The capitalist bias is so great that we consider that currency intervention is a remedy to any economic problem. Hayek in his later work Denationalization of Money proposed a decentralized ledger intended to find a better suited solution to compensating the fiat money. We are building this model today to prove his theory. We believe the decentralized finance has an answer to all the problems that our current distribution system faces.



# COMMUNITY

Sigma Protocol is a totally decentralized project,  
governed by the community.

The community is growing, we are learning from  
our mistakes.



thank you for your time and patience.



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