Add LUSD as a borrowable asset on Aave

References

- Project: https://liquity.org/

- Whitepaper: [DocSend](#)

- Twitter: https://twitter.com/liquityprotocol

- Codebase: [GitHub - liquity/dev: Liquity monorepo containing the contracts, SDK and Dev UI frontend](#).

- Documentation: https://docs.liquity.org/

- App (list of front-ends): [Liquity | Frontends List - Use Liquity](#)

- Audit - Coinspect - March 21: [Liquity Audit](#)

- Audit - TrailOfBits Security Assessment: [publications/Liquity.pdf at master · trailofbits/publications · GitHub](#)

- Audit - TrailOfBits Liquity Protocol and Stability Pool Financial Report - March 21: [publications/LiquityProtocolandStabilityPoolFinalReport.pdf at master · trailofbits/publications · GitHub](#)

- Audit - TrailOfBits Liquity Proxy Contracts Report - March 21: [publications/LiquityProxyContracts.pdf at master · trailofbits/publications · GitHub](#)

- LUSD token contract: [$1.03 | LUSD Stablecoin (LUSD) Token Tracker | Etherscan](#)

- Discord: [Liquity](#)

Paragraph Summary

LUSD is stablecoin minted directly by the protocol users by opening a Trove and depositing ETH as collateral. Loans are interest-free, with a 0.5% base initiation fee. All the contracts of the Liquity protocol are immutable, which makes LUSD the most trustless stablecoin currently available on the Ethereum mainnet.

LUSD is overcollateralized by ETH with two main mechanisms helping it keep its peg: first, LUSD can be redeemed for ETH at face value (i.e., 1 LUSD for $1 of ETH). Secondly, there is a minimal collateral ratio of 110%. Both mechanisms respectively create a price floor and ceiling through arbitrage opportunities.

Since the protocol is immutable, no additional developments are planned, yet the Liquity team is working on another project that will prove synergetic with LUSD.

LUSD's resilience makes it a highly sought-after stablecoin for DAOs and protocols looking to diversify their treasury and users looking for cost-effective leverage on ETH. The current focus is to grow the DeFi ecosystem around LUSD to enable more diverse use cases.

This proposal aims to add LUSD as a borrowable asset on Aave v2 mainnet (0% LTV). If the current proposal is met with enthusiasm, other proposals will follow suit.

Specifications

AIP author status

I, TokenBrice, author of this ARC [recently joined](#) the Liquity team to help with DeFi strategy.

Overview of the project and token

Liquity is a protocol offering cost-efficient leverage using ETH as collateral. While its base design can be described as similar to Maker/DAI, there are several key differences:

- Only ETH is accepted as collateral to maximize the protocol's trustlessness and resilience.

- There is no interest fee on Liquity. Instead, the borrowers pay a predictable initiation fee starting at 0,5% — and ramping up algorithmically when needed to protect the protocol.

- Liquidations are close to instant, and enabled by a protocol-level backstop: [the stability pool](#), a reserve of LUSD deposited by users.

- Just like Aave, Liquity uses ChainLink as the main price feed. However there is a [fallback system](#) in place, switching to Tellor, if the ChainLink price feed data is deemed incoherent.

- Since the contracts are immutable, there is no governance. There is still a token associated with the protocol – LQTY, but it's used for incentivization and fee-sharing purposes only.

- The minimal required collateralization ratio is lower – at 110%, increasing the capital efficiency of the protocol. This is possible thanks to the stability pool and instant liquidation mechanism which also helps maintain the peg by acting as a liquidity buffer. A failsafe mechanism, called the Recovery Mode, is triggered when the total collateralization ratio of the protocol falls below 150%. Being an exceptional measure, the Recovery Mode enforces more substantial restrictions on the Troves, such as temporary minimal collateralization of 150%, until the total collateralization ratio of the protocol recovers. So far, it was only triggered once in the early days of the protocol.

Positioning within Aave Ecosystem

LUSD is a stablecoin offering some genuinely unique features, the leading one being the trustlessness of the whole Liquity protocol. In that sense, LUSD is one of the most resilient stablecoin and the most decentralized. Similar to the addition of RAI on Aave, having LUSD will help Aave diversify from the current dominance of centralized stablecoins such as USDC used for borrowing.

Furthermore, as mentioned above, this proposal is the first step. Several others could follow to nurture the relationship between Aave and Liquity further:

1. Enablement of LUSD as collateral (LTV>0%)

2. Enablement of efficiency mode against selected stablecoins once v3 mainnet is live.

3. Addition of LUSD on Aave/Optimism + potential enablement as collateral + again enablement of the efficiency mode.

I believe that LUSD as a borrowable asset will be met with a strong demand: it will be the first time such a resilient stablecoin could be borrowed on Aave and the first protocol where LUSD is borrowable.

History of the project and its components

The Liquity protocol was launched on the 5th of April, 2021. As the code is immutable, there has been no update since then. However, the team is still actively working on the protocol' DeFi integrations, such as supporting LUSD liquidity on Curve.

Since the demand for LUSD is directly dependent on the appetite for leverage on ETH, the LUSD supply had varied quite a bit since the launch, with the highest point around 1.5B LUSD when ETH reached a peak price of ~$4K. The following correction on ETH, with the lowest point around $2K, led to a drastic reduction in the LUSD supply – this episode is the first and so far unique time when the Recovery Mode was triggered. Since this episode, the supply has stabilized more and is now around 325M LUSD. This episode was the first massive stress test for the Liquity Protocol, which handled it gracefully – a recap is available here:

liquity.org

How Liquity Handled its First Big Stress Test

On 5/19/2021, Liquity faced its first big stress test as the ETH price dropped (rather quickly) from ~$3,400 to ~$1,800 on some exchanges. In this post, I'll provide a brief recap of what happened.

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Since the protocol launch, various DeFi integrations have been built on top of the Liquity Protocol, here are some of the most notable:

- A Curve pool (+integration on Convex and Yearn) was created against the 3Pool and became the main liquidity source. It's amongst the stablecoin pools with the highest base APR due to the trading volume it processes.

- DeFiSaver offers some automation features to streamline Troves management.

- B.Protocol delivered an auto-compounder for depositors of the Stability Pool who wish to keep a 100% LUSD exposure: B.Protocol

- Some protocols, such as Olympus or Fei Protocol diversified part of their treasury to LUSD to shield themselves from volatility with an unstoppable stablecoin. Synthetix is also using LUSD on Optimism to stabilize the sUSD price.

LUSD usage

A sizeable share of the LUSD supply (~66%) is deposited into the Stability Pool, the liquidity backstop for liquidations: [Liquity: Stability Pool | Address 0x66017d22b0f8556afdd19fc67041899eb65a21bb | Etherscan](#)

The top LUSD holders also include other protocols, such as Olympus, DXdao or some treasuries.

LUSD is also present on Optimism, where Synthetix provided a wrapper contract to help stabilize the sUSD price (~45M LUSD) + to provide liquidity on Velodrome (the pool is ~9M TVL, against USDC).

LUSD Emission

The only way to mint LUSD is to open a Trove, while LUSD is burned through debt repayment, either directly (by the trove owner) or through redemptions (by an arbitrageur).

Token & Protocol Permissions

The LUSD token as well as the whole Liquity protocol are fully permissionless. There is no multisig and no governance, and no-one can interact with the contract underlying the protocol in an administrative manner: all users are the same in front of the contract, just like with Uniswap v2 for instance.

Market Data

As of June 03, the total LUSD supply is around 325M. There is about $90M of total liquidity in pools where LUSD is involved.

The main liquidity source for LUSD is the Curve pool with ~$65M TVL:[Curve.fi](#)

There are also liquidity sources against FRAX, USDC and DAI on Uniswap V3:[Uniswap Info](#)

There is a 4-tokens pool on Saddle Finance (alUSD, FEI, FRAX, LUSD) with $25M liquidity:[Saddle](#)

Finally, on Optimism, LUSD is the largest stablecoin pool with around ~$9M against USDC [https://app.velodrome.finance/liquidity/0x207addb05c548f262219f6bfc6e11c02d0f7fdbe](#)

The observed volume can vary depending on the market's activity (massive ETH price movements are usually followed by days with large volume), with a baseline around $3M daily volume (mainnet only).

Social channel data

The main channel for the community to gather is the Liquity Discord server, with around 6.5K members. For outward-facing communications, the main channel used is the @LiquityProtocol

Twitter account with over 28.5K followers. We also regularly publish newsletter updates to subscribers (2.5K) and have recently become more active on LinkedIn (<1K).

Contract Related Information

Deployment of the LUSD contract - 05 April 2021:[Ethereum Transaction Hash (Txhash) Details | Etherscan](#)

The first minting of LUSD - 05 April 2021:[Ethereum Transaction Hash (Txhash) Details | Etherscan](#)

Number of transactions on LUSD: 197,461 (+ ~2000 on Optimism)

Number of token holders on LUSD: 4758 (+ ~100 on Optimism)

Risk Assessment

We followed [Aave's risk assessment methodology](#) to provide all the necessary metrics:

I'm not sure what the proper rating is for a stablecoin with no governance and immutable code should be when it comes to the "Permission" category, so I went with an A to reflect that in that regard, LUSD is almost as safe as ETH. Feel free to challenge me if you think that is not appropriate.

(Volume data from [CoinGecko](#))

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cdn.com/business20/uploads/aave/original/2X/2/205f0e4640c15a47bcb1c111e111ca03b063d63e.png)

Smart Contract Risk

Maturity

Transaction

429

197990

B+

C+

Counterparty Risks

Holders

Permission

4763

Permissionless and Immutable

C

A

Market Risk

Market Cap

Average Volume

Normalized Volatility

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1M

3M

1M

3M

6M

337989637

12244118.23

7406951.186

0.002836979528

0.002166153429

0.004069270527

B

C

C

A+

A+

A+

Implementation - Oracle

Since Aave v2 uses ETH-based ChainLink price feed, and LUSD's feed is USD based, an adapter contract was needed, similarly to what ENS did.

It can be found here: [LSUDUsdToLUSDEth | Address 0x60c0b047133f696334a2b7f68af0b49d2f3d4f72 | Etherscan](#)