

Hi all,

Guangye here from [@Michigan_Blockchain](#).

Summary

Deploy Aave V3 on Celo to expand Aave real-world lending and green asset collateral to users around the world, with the provision of rewards to bootstrap liquidity.

Proposal

[@Michigan_Blockchain](#) and [@PennBlockchain](#), in partnership with the Celo Foundation, propose the deployment of the Aave v3 protocol to Celo on behalf of the community. This proposal is providing background information on Celo and why Aave v3 should be deployed on Celo. Specific asset specifications and risks are not yet highlighted and will be done pending approval from the Aave community.

Celo is a mobile-first, carbon-negative, EVM-compatible blockchain. Specifically, we propose launching Aave v3 on the Celo platform to:

- Bring Aave's infrastructure to protocols on Celo focusing on real-world use cases and financial inclusion.
- Expand Aave's reach to the 6B smartphone users around the world utilizing the Celo blockchain's mobile-first design.
- Increase Aave's global presence and bring in new users currently not utilizing web3 technology through
- 0.5% of outstanding CELO circulating supply in financial rewards over a multi-year time horizon to Aave users
- Additional grant funding provided by the Celo Foundation to utilize Aave as a financial building block for novel use cases with the Celo ecosystems nonprofit partners (e.g. [Mercy Corps Ventures](#), [Grameen Foundation](#), and [CARE International](#)). Examples include [employer-based lending](#) and [impact cards](#).
- Serving as the go-to core DeFi infrastructure for real world use cases such as gamified mobile savings ([GoodGhosting](#)), UBI beneficiary savings ([ImpactMarket](#)), e-commerce ([Nuzo](#)), community currencies ([Grassroots Economics](#) and [Kolektivo](#)), and climate action ([Spirals](#)).
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- In the medium to long-term, create mechanisms for natural capital-backed assets such as tokenized carbon credit to serve as collateral for borrowing on Aave given Celo's ReFi focus

Motivation

Currently, borrowing and lending on the Celo Platform ("Celo") is possible with [Moola](#) and [Chee Finance](#). Moola, the primary borrowing and lending protocol, focuses on CELO and Mento stable assets (cUSD, cEUR, and cREAL) and recently experienced a [hack](#). There is strong demand in the Celo ecosystem for a blue-chip capital efficient liquidity protocol that supports CELO and Mento stable assets and in the future will add non-CELO assets (particularly ReFi assets). Additionally, a blue-chip liquidity protocol would support the recent deployments of [Curve](#) and [Uniswap v3](#) on Celo to support overall DeFi activity. We seek to be purposeful and rigorous in identifying a need for deploying notable protocols onto the Celo blockchain. For Uniswap v3, it was a capital efficient DEX for natural capital assets that required concentrated liquidity. For Curve, it was a DEX with multi-coin pools for stable assets that would allow people and projects to better bridge on/off ramp onto the Celo blockchain (e.g. swap cUSD for USDT to offramp). For Aave, it is a borrowing and lending protocol built for long-term growth with an emphasis on security that will support current Celo-based asset needs and future non-CELO and Mento assets. This is crucial to bringing greater DeFi projects to Celo's desktop and smartphone users around the world.

Celo focuses on real-world use cases of DeFi in which Aave can serve as a key building block, especially given Celo's mobile emphasis which will bring in new Aave users. One example is utilizing Aave's credit delegation feature. The Celo Foundation and Mercy Corps Ventures recently launched a pilot in rural Kenya utilizing [credit delegation for employer-based lending](#). The Celo Foundation and Mercy Corps Ventures are currently looking to scale this solution as part of the [Social Impact Collective](#) and require a robust protocol—something we hope to specifically partner with the Aave community on

scaling. Aave helps promote new use cases such as this, by allowing for crypto assets to be utilized in community-based financial models. Two other DeFi focused examples on Celo include [GoodGhosting](#) and [Spirals](#), both of which have expressed interest in using Aave for savings and climate impact respectively for everyday users.

Additionally, with the launch of the [Climate Collective](#), the Celo ecosystem features a growing group of ReFi projects (e.g. Toucan, Senken, Thallo, and Spirals). In the future, as these ecosystems grow through further engagement with carbon registries (e.g. Verra and Gold Standard), as well as define new carbon credit standards through the mass-coordination tool of blockchain technology, Aave will serve as a centerpiece for the growth of ReFi allowing users to access liquidity with their natural capital-backed assets. This in turn supports longer term holding of natural capital-backed assets, a more liquid marketplace for these assets, and growth of ReFi across web3. By creating a more robust and liquid ecosystem for natural capital assets, the Celo community has the vision of creating natural capital-backed currencies that would lead to a growth in preserved natural resources. To do this, Celo has a long-term goal of adding natural capital-backed assets to the [Mento Reserve](#) as part of the Climate Collective.

Overall, we believe Aave's mission of creating the infrastructure for anyone to serve as a depositor or borrower aligns closely with Celo's vision of real world DeFi and ReFi.

About Celo

Celo's mission is to build an open financial system that creates the conditions of prosperity for all. To execute this mission, Celo's technology features include:

- **Mobile First:** A mobile-first EVM-compatible layer 1 blockchain that is accessible to anyone with a smartphone. Celo has a fast and secure PoS consensus protocol with 1 block finality that aggregates validator signatures using the SNARK-friendly BLS12-377 curve. This choice enables mobile friendly SNARK-based light clients such as Plumo 1, as well as SNARK proofs that can prove asset ownership off-chain. The network includes a decentralized phone verification protocol that can be used by dApps for lightweight sybil resistance and to make it easier for wallets to use hashed phone numbers as identifiers in an interoperable manner.
- **Assets:** Gas can be paid with CELO or ERC20 tokens (that have been allow-listed through Celo's on-chain governance). This would make it possible for Aave users to pay for transactions with Mento stableassets (e.g. cUSD, cEUR, cREAL). The CELO asset supports the ERC20 interface natively, which does away with the need for a wrapped counterpart like WCELO. The network includes a few stablecoins that have been allow-listed as a gas currency (cUSD, cEUR, and cREAL).
- **Regenerative Finance:** Carbon negative by allocating 0.1% of epoch rewards to offset carbon—to date [3,569](#) tons of carbon has been offset, which is over 8 times Celo's carbon footprint.

Ecosystem: Celo is one of the fastest growing DeFi ecosystems with [3.9M addresses, up to 1M daily transactions, and over 174M transactions since the network launched](#). Celo activity is now back to levels during fall 2021 with [~500K daily transactions](#) and TVL in CELO terms being higher than any prior period at [175M CELO](#). Additionally, Celo has been chosen by [Kickstarter](#) for its upcoming decentralized product (to date, Kickstarter has successfully supported over [214,000 projects with over \\$6B in funding and 20M backers](#)) and [Deutsche Telekom](#) which will attract new users to the ecosystem.

Real World Use Cases: The Celo ecosystem utilizes TVL for real world applications. Several of these real world use cases include the following

- **UBI:** impactMarket currently supports over [17,000 beneficiaries](#) around the world.
- **Climate:** [Toucan](#) protocol offers on chain carbon credit retirements. Toucan has launched their assets on the Celo blockchain and expects to support retirements in December.
- **Real world lending:** [EthicHub](#) supports 21 smallholder farming communities in Mexico, Brazil, and Honduras for uncollateralized lending.
- **Commerce:** [Nuzo](#) is a shop-to-earn and eCommerce marketplace in Kenya which supports over [40,000 users](#) through stablecoin payments, offramps to mobile airtime, and reward tokens.
- **Native mobile offramps:** Through [FiatConnect](#), an API standard for web3 wallets to integrate with cash in/cash out providers, Celo users will be able to natively onramp and offramp through mobile wallets. The initial activation for [Valora](#) wallet users in ~11 countries is expected to happen in early Q1 2023.

Security: The chain consensus is Proof of Stake with validators taking delegation. There is no multisignature contract that can change the network. On-chain governance proposals and hard-forks are the only ways to make changes to the network. The Smart Contract was audited by [OpenZeppelin](#) and a Security Audit was conducted by [Trailofbits](#). There is also a formal verification of Celo governance protocols by [Certora](#)

Bridge Infrastructure : Token bridges include [Portal \(Wormhole\)](#), [Allbridge](#), and [Satellite](#). Cross-chain messaging partners include [Wormhole](#), [Hyperlane](#), [LayerZero](#) and [Axelar](#).

Rationale for the Aave community/ ecosystem: The Celo ecosystem is well suited for building DeFi applications due to its mobile compatibility and focus on building out real world DeFi and ReFi use cases. The Celo foundation has also allocated 0.5% of CELO circulating supply as incentive for Aave users to support the adoption and bootstrap growth on Celo. This deployment will bring new users to the Aave platform and reach more users from the Celo community. The Celo Foundation can also support Aave DAO in setting up a verified node for the Celo network (subject to technical requirements being met and voting by the community) for which Celo can provide a grant.

Next Steps

The first step to this will be a snapshot vote for the Aave community to determine deployment on Celo.

Aave operations rely on the Chainlink oracle and The Graph indexer. The Graph indexer is already available on Celo. The Chainlink SOAK test is completed and we are waiting for the Chainlink team for implementation. Pending approval from the Aave community and completion of Chainlink integration, Aave v3 will be deployed on Celo given that Celo is fully EVM-compatible. We believe that approval from the Aave community will help Chainlink prioritize deployment on Celo following their earlier [communications](#) on planning to deploy on Celo.

Upon a successful deployment, the Celo Foundation will launch a rewards program with 0.5% of CELO circulating supply of rewards to support the adoption and bootstrap growth of Aave on Celo. We see Aave as a core long-term partner, we propose a multi-year rewards program (3-4 years) rather than a large upfront volume of rewards. We believe that a high level of Celo rewards upfront will result in mercenary capital that damages the ecosystem in the long term, and in the current market will also lead to increased downward pressure resulting in reduced APR for Aave users on Celo. We're open to feedback and thoughts from the Aave ecosystem on this.

The Celo Foundation can also support the Aave DAO to set up a verified node for the Celo network (subject to technical requirements being met and voting by the community) for which Celo can provide a grant. Additionally, the Celo Foundation will partner with the Aave community to build out real world use cases of Aave including a credit delegation platform for community-based finance.

Celo is ready to onboard Aave to its ecosystem and looks forward to the opportunity to build a long-term, sustainable, and mutually-beneficial relationship. Thank you for your consideration and we welcome questions and suggestions.