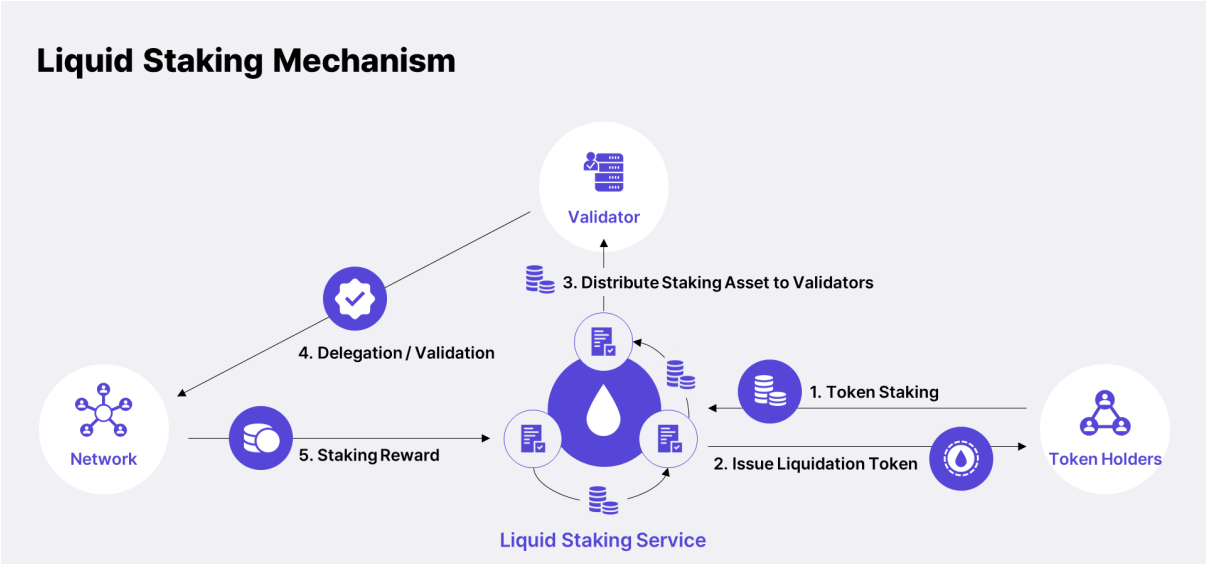
Liquid Staking

Introduction:
In the cryptocurrency world, staking is a well-known concept where a certain amount of digital currency is held and locked to participate in the process of transaction verification on a blockchain network. This practice aims to enhance the network's security and motivates users to hold and use a specific cryptocurrency. However, traditional staking can restrict the liquidity of the cryptocurrency, posing challenges for users in accessing their assets

Liquid staking offers an alternative to traditional staking by enabling users to stake Ethereum flexibly. Instead of locking up ETH, users can stake any amount and effectively manage it without transaction requirements. This is achieved by issuing a tokenized version of the staked ETH, akin to a derivative, which can be used like a regular token for transfers, storage, spending, or trading.

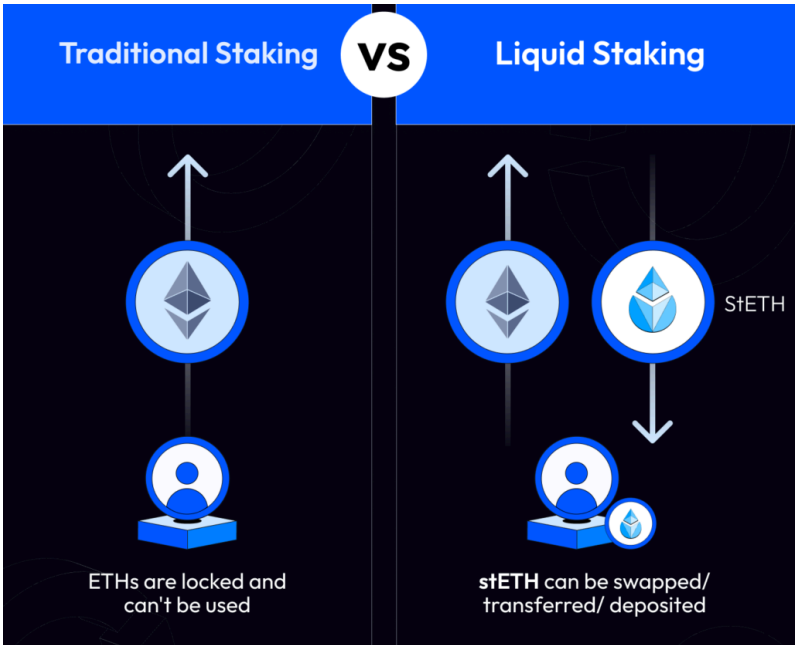
Users deposit ETH into a third-party application, which stakes it on their behalf using its validators. In exchange, the application issues a token representing the staked ETH (e.g., stETH). This token allows users to retain liquidity of their ETH, enabling them to move their assets freely while still accruing Ethereum staking rewards.



Difference between Liquid staking and Traditional Staking:

	Liquid staking	Traditional Staking
Liquidity	Staked tokens can be traded or used for other purposes while still earning staking rewards.	Users cannot access their staked tokens until the staking period ends. This lack of liquidity can be a problem for some investors who want to trade or use their tokens
Flexibility	Offers users more flexibility to trade or use their staked tokens while still earning staking rewards.	Locks up the staked tokens for a certain period of time, limiting their liquidity and usability.
Earning Potential	The benefits of liquidity and flexibility may outweigh the lower rewards for some investors	May offer higher rewards due to the tokens being fully locked up
Risk	- Rug Pull projects - Smart contract bugs - Imparmanent loss	- Validator risk - Volatility risk - Extenden lock up periods

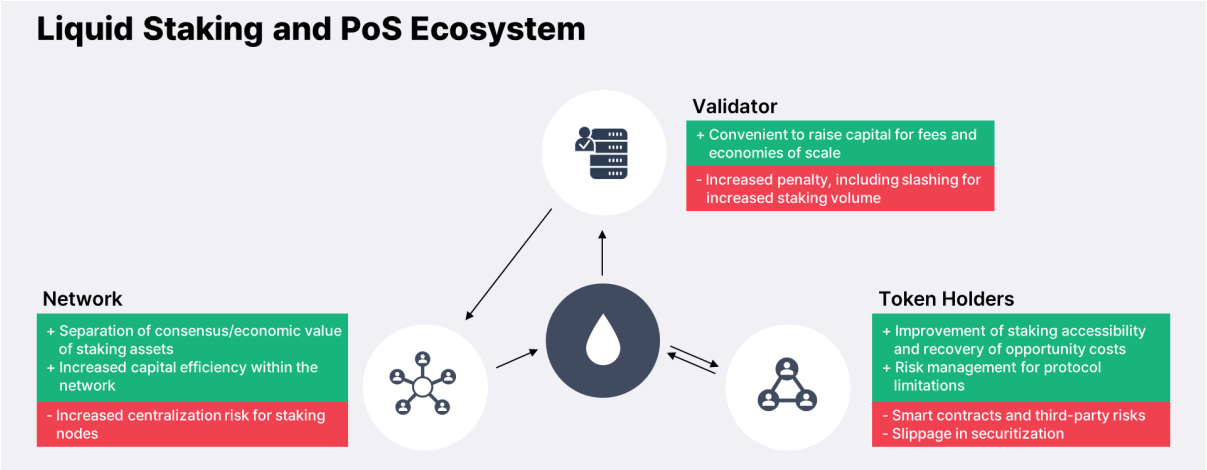
		- Liquidity risks



Liquid Staking Derivatives (LSDs):

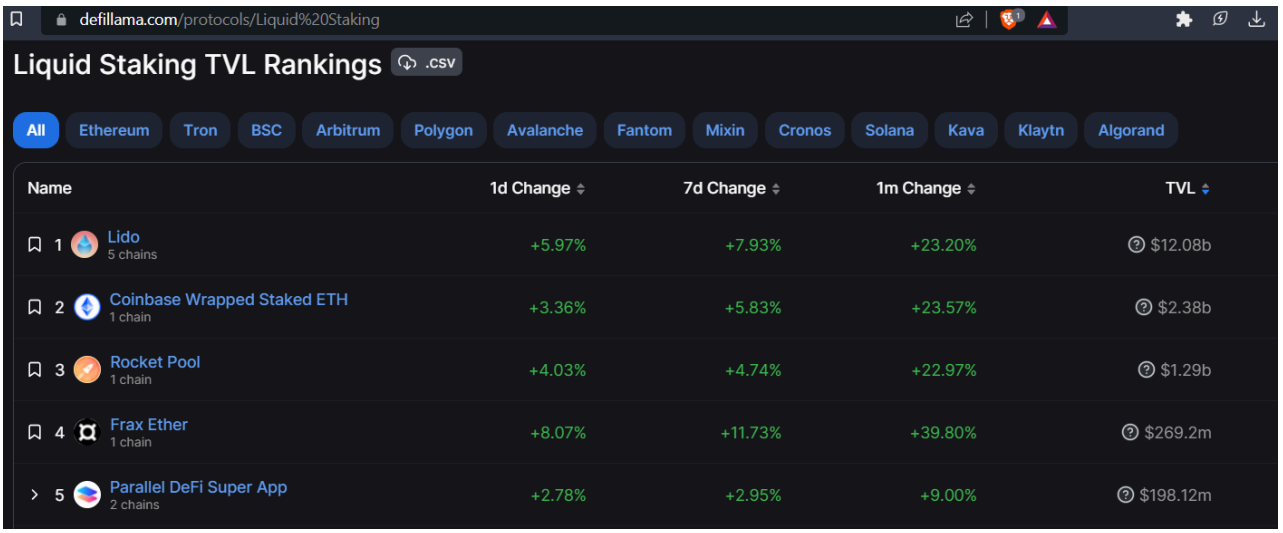
Liquid Staking Derivatives are financial instruments that allow crypto investors to earn staking rewards without immobilizing their assets. These derivatives are represented as tokens, backed by staked assets, tradeable on exchanges, and usable in decentralized finance (DeFi) applications. This approach offers investors the benefits of staking rewards while maintaining their assets' liquidity and usability. It also reduces the opportunity cost typically associated with long-term asset lock-up in staking contracts. However, investing in Liquid Staking Derivatives carries risks such as:

- price volatility
- counterparty risk.
- Exploits in the smart contract
- value of derivative tokens may not always precisely correspond to the value of the underlying staked assets.



The top 3 LSD protocols by TVL :

1. Lido Finance
2. Coinbase Liquid staking
3. Rocket Pool



LIDO FINANCE

- Founded in oct 2020
- founders - Konstantin Lomashuk, Vasiliy Shapovalov and Jordan Fish

Funding Info: $167M over 4 Rounds (Latest Funding Type: Series A)

ABOUT

- Initially a third-party staking solution for Ethereum's Beacon Chain, this service evolved into "LIDO FINANCE."
- Lido's inception on Ethereum aimed at decentralizing the Beacon Chain and making staking accessible for holders of less than 32 ETH.
- The platform expanded to other Proof-of-Stake blockchains like Solana, Polkadot, Kusama, and Polygon, with more under development.
- Lido bridges the gap between staking and DeFi yield-seeking by issuing a liquid Ethereum token, enabling staked ETH to be used as DeFi collateral, similar to regular ETH.

Design goals and constraints

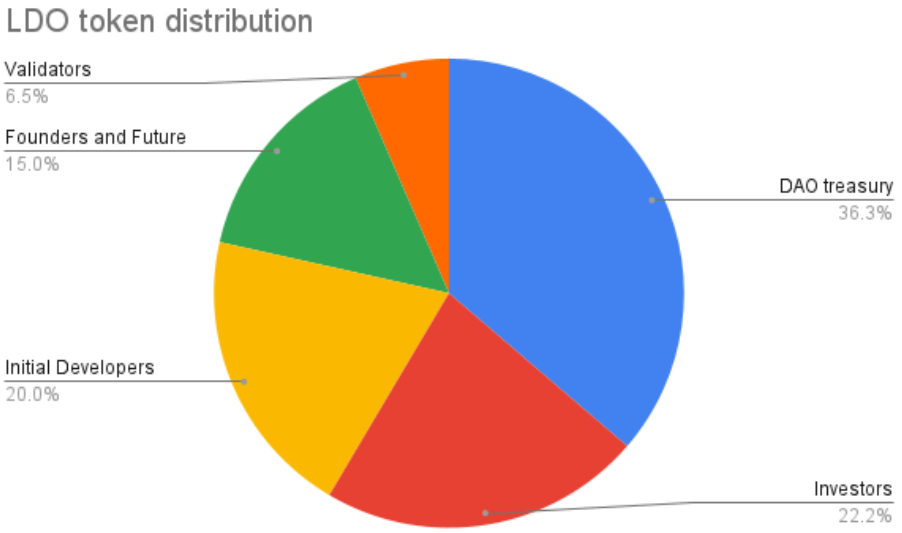
Main objectives:

- Enable users to earn rewards on deposits smaller than 32 ETH without being bound to multiples of 32 ETH.
- Issue stETH tokens for use in other applications and protocols, like as collateral in DeFi.
- Offer an alternative to exchange staking, self-staking, and other semi-custodial or decentralized protocols.

Lido’s structural components

- Staking pool: Manages deposits, rewards, and withdrawals.
- stETH: Represents a liquid staking token with a 1-to-1 balance corresponding to the user's share of Beacon Chain ETH.
- DAO: Governed by an Aragon DAO setting protocol parameters.

Lido Tokenomics



WORKING

Lido Finance operates using smart contracts that are deployed on the Ethereum blockchain. These smart contracts are written in the Solidity programming language and can be interacted with using Ethereum compatible wallets like MetaMask.

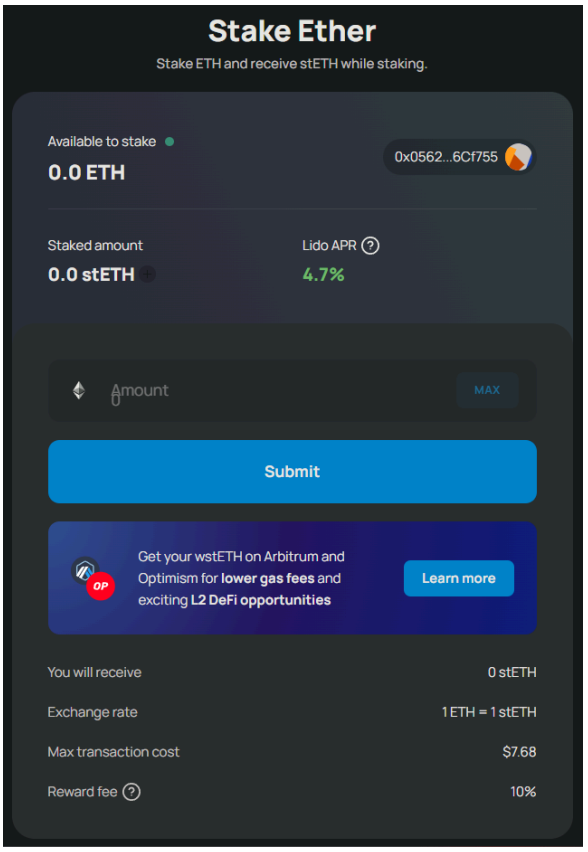
The workings of the platform can be explained in a simple three-step process.

1. **Staking:** Users can stake any amount of ETH they wish to on the Lido Platform. Lido receives the staked ETH.
2. **Minting:** In exchange for the ETH stakes, users can avail the derivate token of Lido DAO known as sETH (liquid asset).
3. **Yield using stETH:** The stETH availed by the users can be used for staking across multiple Defi protocols, thereby opening up more investment opportunities.

Processes in detail :

- When a user wants to stake their Ethereum tokens with Lido, they send their tokens to a smart contract called the Lido deposit contract.
- This contract handles the process of converting the user's Ethereum into a tokenized version called stETH, which represents the user's staked Ethereum on the Ethereum 2.0 network.

stETH token - stETH is an ERC20 token that represents staked ether in Lido. Tokens are minted upon deposit and burned when redeemed. stETH token balances correspond to the ethers that are staked using the Lido smart contract.

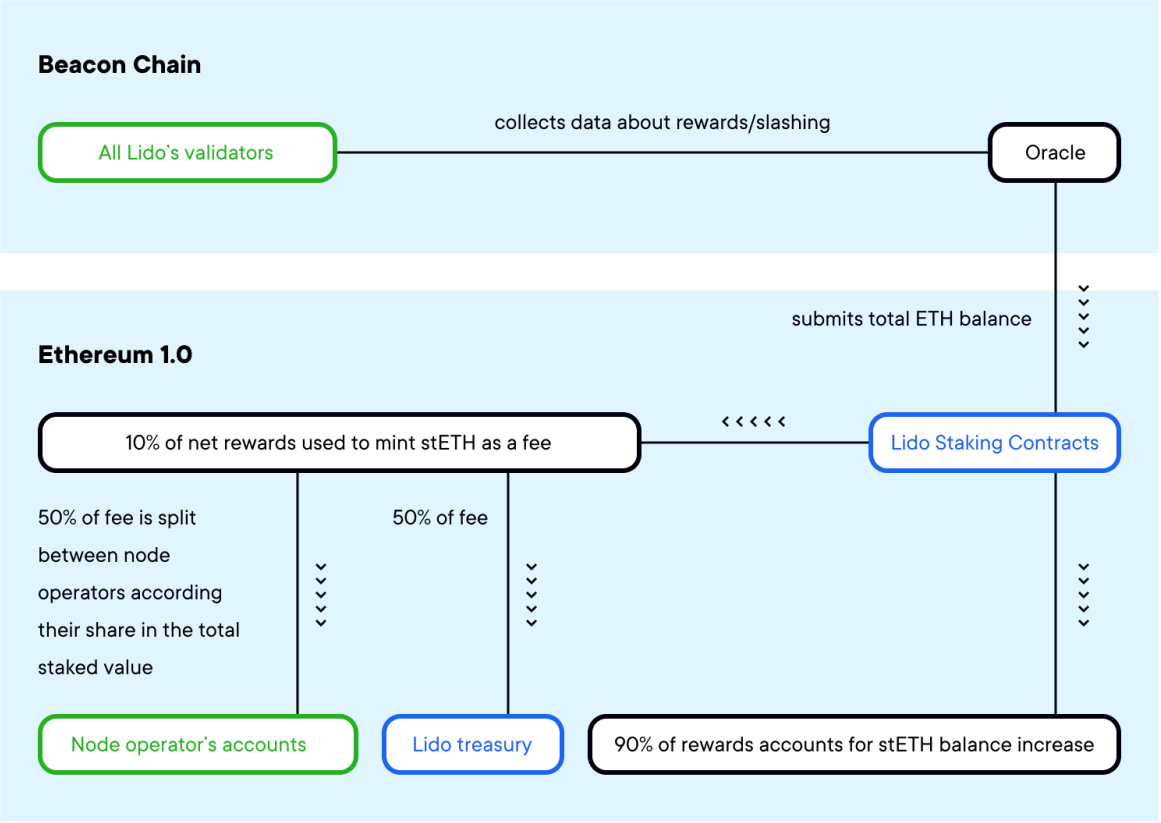


- The contract also manages the distribution of rewards to users in the form of stETH.
- The stETH token is an ERC-20 token that can be traded on decentralized exchanges like Uniswap.
- When a user wants to redeem their staked Ethereum, they can simply exchange their stETH tokens for ETH at the prevailing market rate.

LIDO Node Operators :

Lido Finance employs a network of node operators to maintain the smooth operation of the Ethereum 2.0 network and safeguard users' staked

Ethereum. These operators manage validator nodes, contributing to Ethereum 2.0's consensus process and earning rewards. Lido Finance levies a service fee, which compensates these node operators and supports the continued development of the protocol.



Lido DAO

Key features of Lido DAO

Possible risks when staking on Lido?

- Technical risks related to the Beacon Chain
- Smart contract bugs
- DAO-related risks

Pros	Cons
Offers a unique flexibility option in Staking	The 10% fee on the Lido platform is high
Decentralised	Highly dependent on Ethereum

LDO token performance at a glance

Time	Returns
1 month	98.05%
3 months	63.31%
6 months	63.31%
Year to date	112.57%

Coinbase

- 2012–2019: founding and early years
- Founders - Brian Armstrong, Fred Ehrsam
- Based in - San Francisco

- In October 2012, the company launched the services to buy and sell bitcoins through bank transfers

How Does Coinbase Liquid Staking Work?

- Coinbase Liquid Staking, tailored for Ethereum 2.0 (ETH2), is now available.
- Staking your ETH2 via Coinbase involves depositing them into Coinbase's own Ethereum 2.0 validator.
- Coinbase is responsible for generating and distributing staking rewards to you as the staker.
- To bolster network security, Coinbase employs a dual wallet system: a hot wallet for transaction processing online and a cold wallet for offline storage of staked assets.
- This dual wallet approach ensures the safety of staked assets in the cold wallet, even if the hot wallet is compromised.

Two core principles :

- Ease of use
- Security

Coinbase utilizes the Liquid Collective for Ethereum (ETH) Staking.

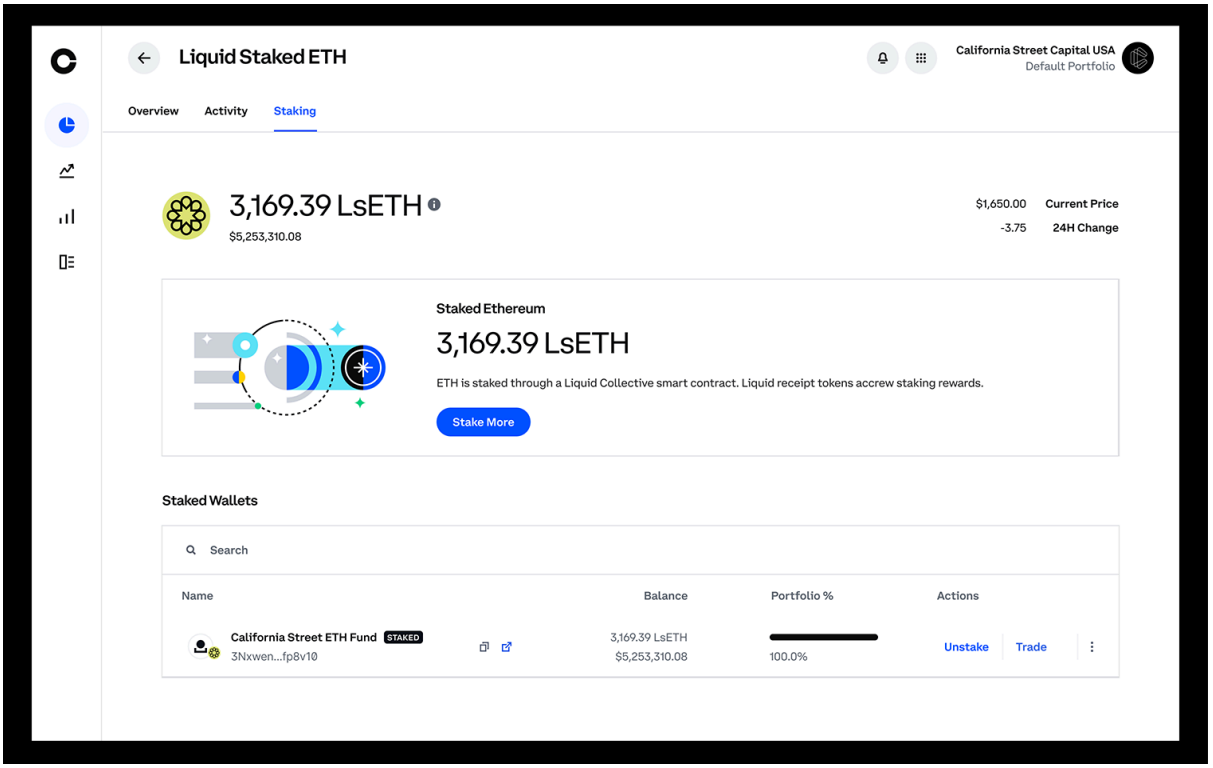
- Rewards are generated from the Liquid Collective protocol; Coinbase serves merely as a facilitator connecting users, validators, and the protocol.
- Rewards from staking, minus a specified Coinbase fee, are passed on to users. In exceptional instances, staked assets might be forfeited due to network penalties or errors.
- To earn rewards, customers must actively opt into staking, as holding an eligible asset is not sufficient.

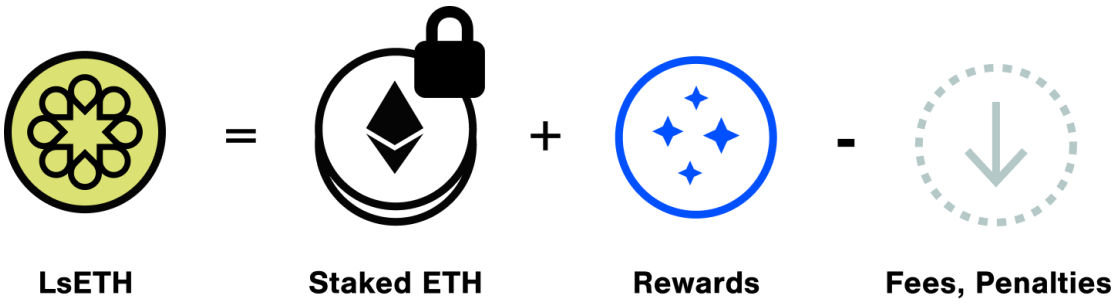
Liquid Collective

Liquid Collective is a decentralised enterprise-grade liquid staking protocol for Ethereum staking on **Coinbase** Prime and Bitcoin Suisse.

Stake ETH with liquidity - Liquid Collective

- Getting involved in ETH liquid staking is simple using Liquid Collective. Work with your preferred Integrator team, including exchanges, custodians, multi-wallet solutions, and brokers, to onboard to the protocol by completing their standard KYC/AML checks.
- Then, use the Liquid Collective protocol to stake your ETH directly via the Ethereum blockchain,
- the protocol will automatically mint your LsETH (which is a liquid staking token programmatically generated by the protocol) to evidence your ownership of your staked ETH, and you can start receiving ETH network rewards knowing that your ETH is staked across security-focused node operators with access to slashing coverage baked-in.
- Liquid Collective's slashing coverage treasury is supported via the protocol's service fee.





The eligibility requirements for rewards?

- You must have your identity verified
- You must have the minimum balance needed for that specific cryptocurrency

Pros	Cons
Trusted platform	Very high fee (around 20%)
Provides slashing coverage	Centralised

Rocket Pool

- founded in late 2016
- founders - Darren Langley, David Rugendyke

How does it work? Rocket Pool is designed for stakers of all sizes, enabling trustless ETH staking through a decentralized network of node operators, underpinned by RPL token collateral

- **ETH holders have two options:**
  - Utilize a service provider.
  - Earn by becoming an operator.
- The protocol consists of three main components: smart contracts, the Smart Node Network, and Minipool Validators.
- Smart contracts manage ETH deposits, allocate them to node operators based on demand, and handle various tokens.
- The Smart Node Network, a decentralized network of Ethereum nodes running Smart Node software, facilitates protocol interaction and provides necessary network consensus for the Beacon Chain.
- Users can operate a Smart Node with a minimum of 16 ETH, earning rewards for both running the node and staking their ETH.
- Minipool Validators, unique smart contracts, activate when a node operator's 16 ETH deposit is matched with 16 ETH from rETH stakers, forming a 32 ETH validator that performs consensus duties and earns staking rewards
- By staking their ETH, users can earn rETH tokens through the Rocket Pool protocol.
- Unlike some other tokens, rETH is a non-rebase token, meaning that the amount of ETH supporting each rETH token will grow over time as staking rewards accumulate.
- This allows users to benefit from the growth of their staked ETH, while also earning additional rewards through the Rocket Pool system.

ROCKETPOOL

NEXT GENERATION ETHEREUM PROOF OF STAKE NETWORK

Rocket Pool 2.0

what is it? who's it for?

Rocket Pool is a next generation Ethereum proof of stake (PoS) network designed to be highly decentralised, distributed and compatible with Casper.

We offer any user, business, corporation, pool, wallet provider, exchange, hedge fund; just about any service, the ability to provide their users the option to earn interest on their ether holdings for a fixed term without worrying about maintaining an extensive staking infrastructure, just plug and play.

Visual Guide

users

Who can use it?

individuals, businesses and more

Rocket Pools network can be used by anyone and is entirely permissionless. Want to run your own private staking pool? Have a business or service that wants to offer its users the ability to earn interest on their ether? Integrate with our network, set your own fee rate and get started right away without the need to maintain your own staking infrastructure.

We also offer users the ability to use our own staking pool which is powered by the Rocket Pool network.

1 Ether Deposited

stake for several fixed terms

Ether is sent from the groups (exchange, pool, wallet etc) users into the Rocket Pool smart contracts for a fixed term. Staking durations currently range from 3 months to 1 year.

Fun fact: All of Rocket Pools contracts are upgradable due to their unique development structure.

ether

Rocket Pool
smart contracts

2 Ether Chunked

ether queued and split

When a deposit is received, it's added to a queue and split into 'chunks', each of these is 4 ether in size. With a minimum of 1 ether per deposit, each chunk can contain up to 5 users each.

Fun fact: Chunking helps reduce risk linearly on larger deposits by spreading it across many nodes.

4 eth chunk

4 eth chunk

4 eth chunk

4 eth chunk

status

25%

minipool

4 eth chunk

4 eth chunk

4 eth chunk

4 eth chunk

node deposit
16 ether

Smart Node
San Francisco

status

awaiting deposits

minipool

4 eth chunk

4 eth chunk

4 eth chunk

4 eth chunk

node deposit
32 ether

Smart Node
São Paulo

status

25%

minipool

4 eth chunk

4 eth chunk

4 eth chunk

4 eth chunk

node deposit
16 ether

Smart Node
Amsterdam

status

50%

minipool

4 eth chunk

4 eth chunk

4 eth chunk

4 eth chunk

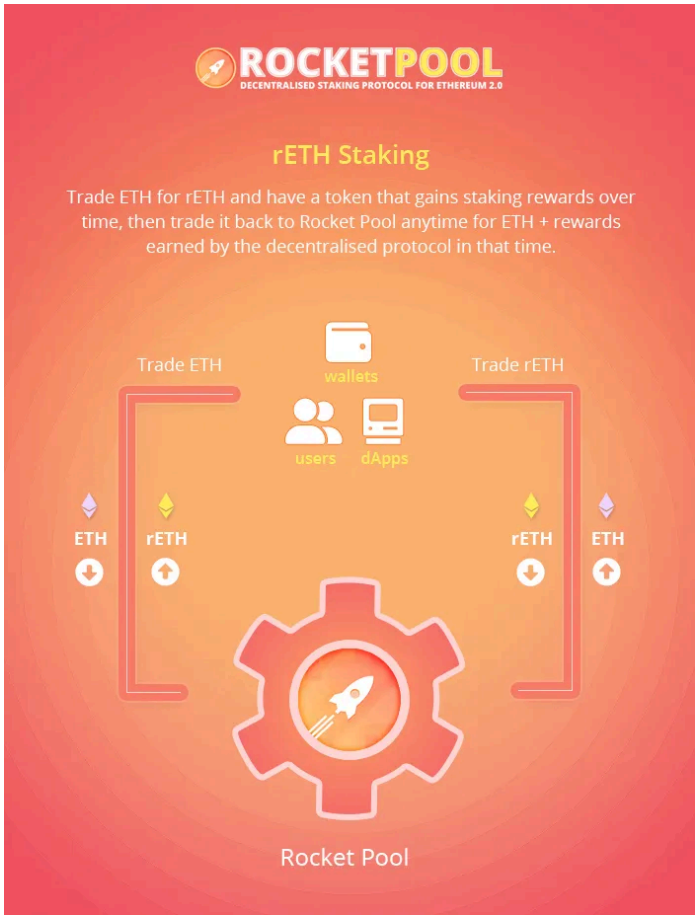
node deposit
16 ether

Smart Node
Brisbane

Rocket Pool's smart contracts on the Execution layer handle all aspects of creating, withdrawing, and delegating rewards, resulting in a completely decentralized process. This eliminates the need for centralized intermediaries or third parties, ensuring that the staking process is transparent, secure, and free from any single point of failure.

RPL, the native token of Rocket Pool, serves two primary purposes:

- Node operators in the Rocket Pool network are required to stake RPL tokens, amounting to 10% of their validator's ETH value, to participate in node operations.
- RPL tokens are integral for the on-chain governance process within the Rocket Pool protocol, enabling token holders to participate in decision-making.



As at January 18th 2023, the total token supply of RPL is 18,970,871. The current circulating supply is 10,279,742 (~54.19% of total supply).

Table of comparison

Criteria	**Lido Finance**	**Rocket Pool**	**Coinbase Liquid st.**
Supported networks	Ethereum, Polygon, Solana	Ethereum	Ethereum,Solana, Tezos
Minimum staking amount	None	0.01 ETH	0.1ETH
Rewards	Native staking rewards + liquid staking rewards	Native stacking rewards + liquid stacking rewards	Native stacking rewards + liquid stacking rewards
TVL	$12.04b	$1.29b	$2.37b
Token representation	Liquid stacking token(stETH)	Liquid stacking token(rETH)	Liquid stacking token(ETH2)
Decentralisation	Decentralised	Fully-decentralised	Centralised
Governance	DAO	DAO	N/A
Security	Audited,insured	Audited,insured	Audited
Platform Fees	10%	5-20%	15%
Withdrawal process	Instant withdrawal	Instant withdrawal	Upto 48 hours
Integration with DeFi	Integrates with various DeFi protocols	Integrates with various DeFi protocols	Limited Integration with coinbase products
Launch date	2020	2019	2021

Which has the most potential to grow and why?

In conclusion, the future success of these staking platforms hinges on various factors, notably their capacity to attract and retain users, extend their service offerings, and adapt to market changes. Each platform possesses distinct attributes

that cater to specific user preferences: Rocket Pool's node operation option, Lido's competitive fee structure, and Coinbase's established reputation as an exchange. These differentiated features position each platform uniquely in the market, enabling them to appeal to diverse segments of users.