

# Catch the tail of ETH 2.0

Serenity, which is the fourth stage also the final form of Ethereum, is what we often call Ethereum 2.0.

The biggest change in Ethereum 2.0 is to introduce Beacon Chain, Shard Chains, and convert PoW mining to PoS mining. Among them, the consensus change from PoW to PoS is the top priority of the Ethereum 2.0 upgrade.

This article attempts to explain three things as follows, hoping to bring you more perspectives, so as to better grasp the investment opportunities in the new situation:

- The development process of Ethereum 2.0
- Ethereum 2.0 Staking Pools
- Ethereum 2.0 Infrastructures

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### Key Points:

- A. About 13.2 million ETH is staked in ETH 2.0 ( Beacon Chain), or 11% of the ETH circulating supply.
- B. At present, there are more than 400,000 active validators with nearly 13 million ETH having entered the beacon chain.
- C. The new supply of ETH is reduced by 90% after Merge. At the current level, transaction fee burns 3000ETH/day, ETH enters deflation.
- D. Lido is currently the largest player in ETH2.0 staking pools, accounting for about 90% of the market share, but with a maximum 25 times leverage.
- E. As more and more users deposit ETH into Rocket Pool and more node operators go online, the demand for RPL purchases will increase due to the large demand for staking.

## 1、The development process of Ethereum 2.0

### 1.1 Important datas before merge

#### ➤ Data of ETH

The market cap of ETH is 198 Billion now, and the TVL is 40.06 Billion according to the data from Defilama on 5th August.

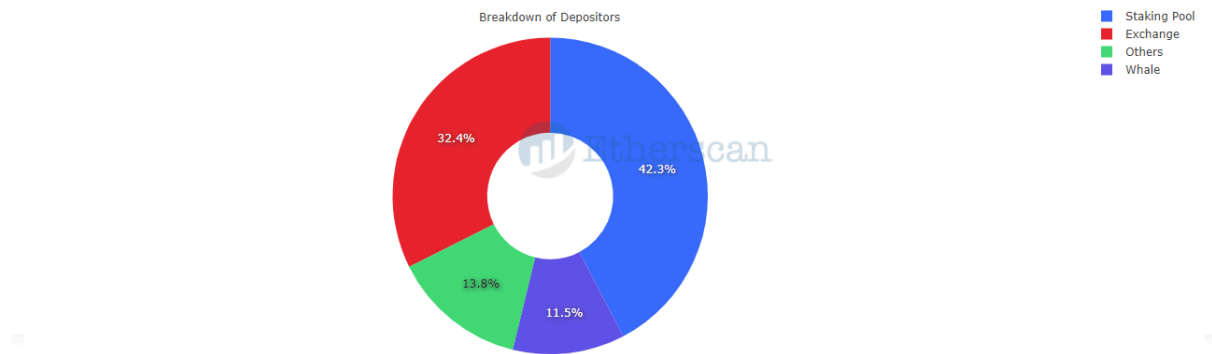
About 13.2 million ETH is staked in ETH2.0( Beacon Chain), or 11% of the ETH circulating supply, according to Etherscan.

Data of ETH before merge	
Price \$	1651
Circulating supply	119,967,777
MC \$	198,088,420,561
TVL \$	40.06b
TPS	13.9
unique ETH 2.0 depositors	77,991
Total ETH staked	13,887,026
Total ETH staked on Beacon Chain	13,181,841

Voted ETH on Beacon Chain	13,153,562
locked in ETH2.0 pools	4,378,586

At present, staking pools provide 42.3% deposits of ETH, then Exchanges.

#### Depositors by Category



Compared with other main POS chains, ETH has got a 10.81% staking ratio, much less than Cosmos and Polkadot.

#	Asset	Price	24h	Reward	Staking Marketcap	Market Cap	Staking Ratio	7d Price Change	Add
1	Ethereum ETH	\$1,680.69	-5.51%	4.08%	\$22,195,962,066	\$201,629,094,759.54	10.81%		+
2	Solana SOL	\$39.54	-7.16%	6.39%	\$15,905,953,432	\$13,760,238,834.17	76.18%		+
3	Cardano ADA	\$0.51	-4.8%	3.83%	\$12,536,757,646	\$17,245,755,819.19	70.42%		+
4	Avalanche AVAX	\$27.36	-2.74%	8.57%	\$7,318,119,286	\$7,795,521,661.99	64.8%		+
5	BNB Chain BNB	\$318.13	-2.02%	4.88%	\$6,028,117,472	\$51,954,379,646.97	83.47%		+
6	Polkadot DOT	\$8.65	-6.4%	14.07%	\$5,485,911,767	\$9,833,914,715.09	51.83%		+
7	Tron TRX	\$0.07	-2.75%	3.48%	\$2,917,423,106	\$6,321,782,956.14	45.99%		+
8	NEAR Protocol NEAR	\$5.39	-0.91%	10.58%	\$2,324,186,379	\$4,063,298,167.76	39.39%		+
9	Polygon MATIC	\$0.88	-4.88%	4.13%	\$2,291,999,295	\$6,566,144,993.36	32.37%		+
10	Cosmos Hub ATOM	\$10.79	-9.4%	17.78%	\$2,159,406,784	\$3,451,255,355.88	65.4%		+

#	Asset	Marketcap	Staking ratio
1	Ethereum · ETH	\$202B	10.81%
2	Solana · SOL	\$13.7B	76.18%
3	Polkadot · DOT	\$9.83B	51.83%
4	Cosmos · ATOM	\$3.15B	65.40%

Ethereum to USD Chart



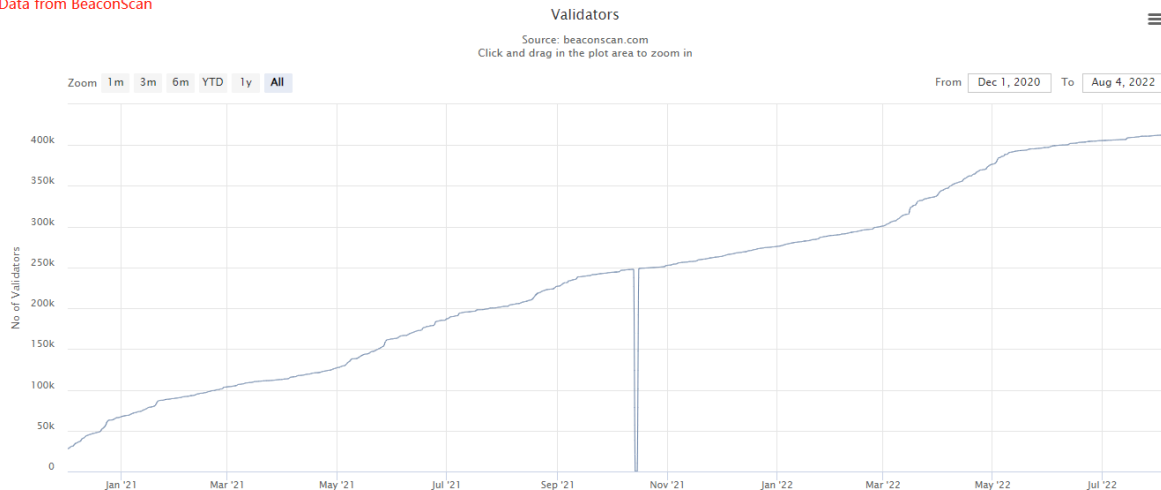
➤ State of Beacon Chain

## The Beacon Chain

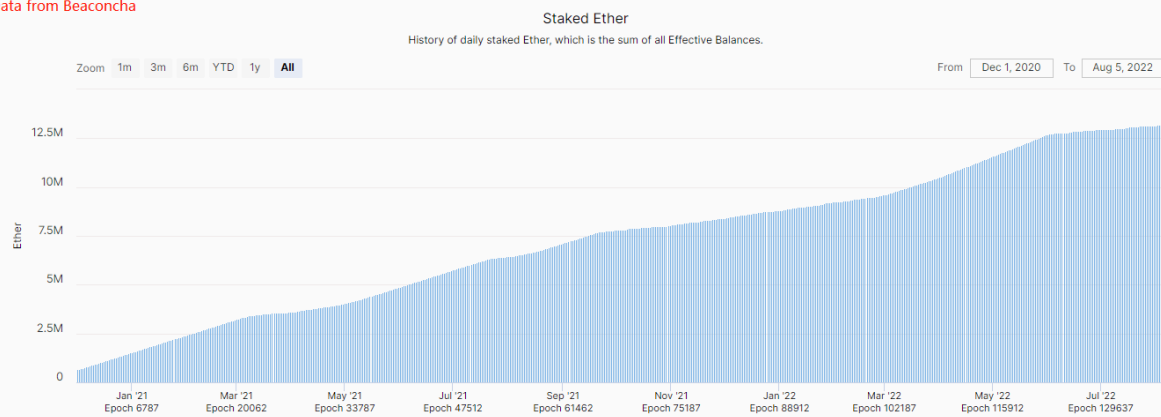
- The Beacon Chain doesn't change anything about the Ethereum we use today.
- It introduced proof-of-stake to the Ethereum ecosystem.
- It will coordinate the network, serving as the consensus layer.
- It is an essential precursor to upcoming scaling upgrades, such as sharding.

The Beacon Chain shipped on December 1, 2020. At present, there are more than **400,000 active validators** ( actually 411950), with nearly **13 million ETH** (13,182,289 eligible) have entered the beacon chain to maintain the consensus.

Data from BeaconScan



Data from Beaconscha



## 1.2 State of the Merge

After years of work to bring proof-of-stake to Ethereum, ETH 2.0 has been well into the final testing stage: testnet deployments! There are three testnet need to be merged before moving to the mainnet, namely Ropsten, Sepolia and Goerli.

- Ropsten was launched on May 30, 2022, it is the first longstanding testnet to run through The Merge. Ropsten will be shut down in Q4 2022.
- Sepolia is the second of three public testnets to run through The Merge started on July 6, 2022. It will undergo a post-merge execution layer (EL) upgrade expected on August 17, 2022.
- Goerli is now ready for The Final Merge, expected between August 6-12, 2022. Goerli also has a strong community and a lot of existing infrastructure supporting it. Its state is the closest to mainnet, which can be useful for testing

smart contract interactions. The Goerli network will merge with the Prater Beacon Chain testnet.

The merge is scheduled for September 19 confirmed by Ethereum devs.

### **1.3 What will happen after Merge**

- First, on proof-of-work, the target was to have a new block every ~13.3 seconds. On the Beacon Chain, slots occur precisely every 12 seconds, which will be produced ~10% more frequently than on proof-of-work. This is a fairly insignificant change and is unlikely to be noticed by users.
- Staked ETH, staking rewards to date, and newly issued ETH immediately after The Merge will still be locked on the Beacon Chain without the ability to withdraw. Withdrawals are planned for the Shanghai upgrade, this means that newly issued ETH will remain locked and illiquid for at least 6-12 months following The Merge.
- The new supply of ETH is reduced by 90%. At the current level, transaction fee burns 3000ETH/day, ETH enters deflation (-0.35%).
- It is estimated that the APR for staking will increase to ~6%, approximately 50% higher than the base issuance APR (as of August 2022).

## **2. Ethereum 2.0 Staking Pools**

### **2.1 Pooled staking with ETH**

Ethereum 2.0 PoS has changed the PoW mechanism of GPU mining in the past. Instead, it adopts the mode of depositing coins to generate interest and generate new coins. Staking is the act of depositing 32 ETH to activate validator software. As a validator you'll be responsible for storing data, processing transactions, and adding new blocks to the blockchain. Any user with any amount of ETH can help secure the network and earn rewards in the process.

The current 2.0 coin deposit reward is 4%, and it will increase by about 50% to 6% after the Merge.

**13,907,142**

TOTAL ETH STAKED

**412,222**

TOTAL VALIDATORS

**~4.2%**

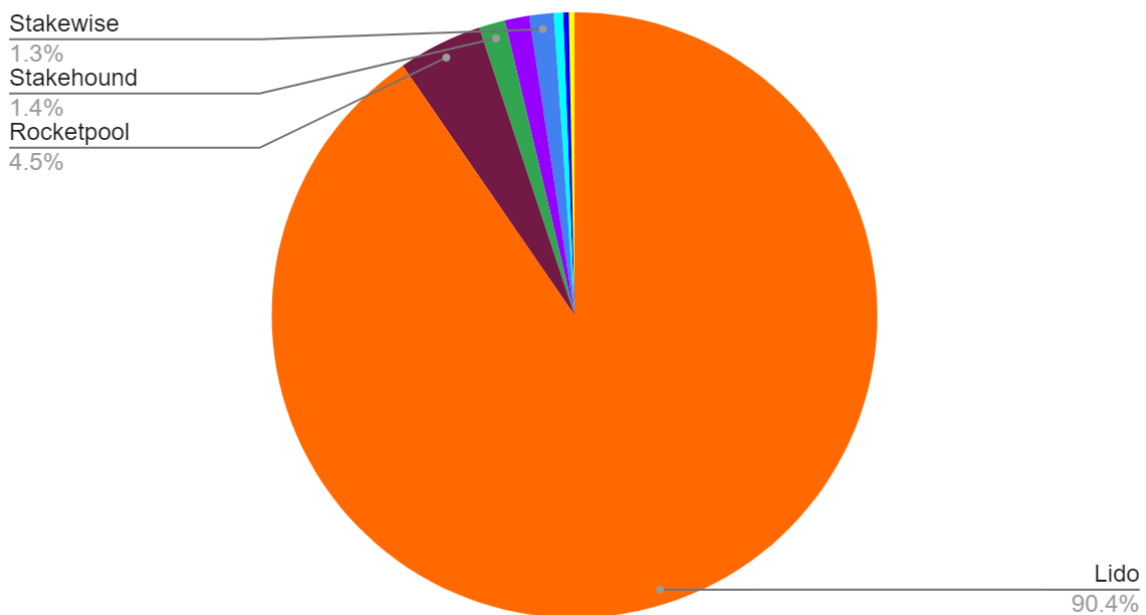
CURRENT APR

There are a variety of options available to help you with your staking. Staking pools are a collaborative approach to allow many with smaller amounts of ETH to obtain the 32 ETH required to activate a set of validator keys.

Lido is currently the largest player in ETH2.0 staking pools, accounting for about 90% of the market share.

Eth2 liquid staking list				
pool	eth_staked	market_share	usd_tvl	depositors
Lido	4,142,342	90.40%	\$6,646,926,374	71,574
Rocketpool	204,304	4.50%	\$327,832,328	3,965
Stakehound	63,009	1.40%	\$101,106,242	242
Stkr	61,334	1.30%	\$98,418,288	3,845
Stakewise	58,676	1.30%	\$94,152,973	4,135
CREAM	25,190	0.50%	\$40,420,196	845
SharedStake	16,000	0.30%	\$25,674,080	1,125
Stafi	12,023	0.30%	\$19,293,008	196
<b>Total</b>	<b>4,582,878</b>	<b>100.00%</b>	<b>\$7,353,823,488</b>	<b>85,927</b>

## Staking pool market\_share



## 2.2 Lido

### 2.2.1 How does Lido work?

Lido is a liquid staking solution for ETH 2.0 letting users stake their ETH - without locking assets or maintaining infrastructure - whilst participating in on-chain activities, e.g. lending.

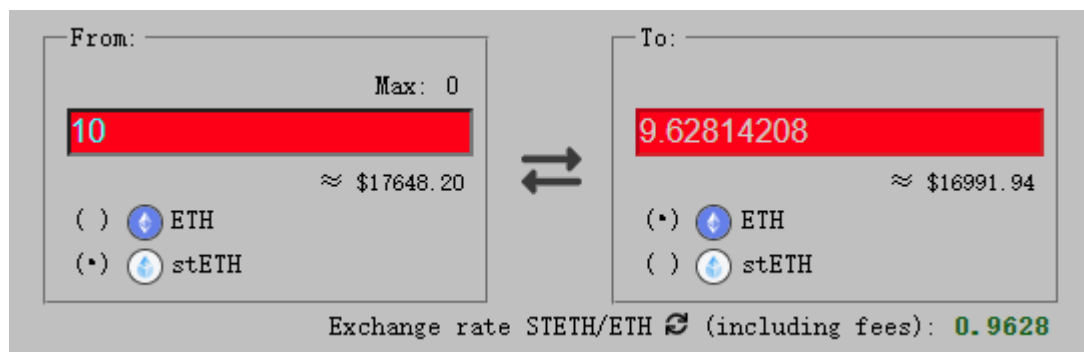
When staking with Lido, users receive stETH tokens on a 1:1 basis representing their staked ETH. stETH can be used like regular ETH to earn yields and lending rewards, and are updated on a daily basis to reflect your ETH staking rewards.

While there's no way to withdraw ETH from staking until withdrawals are enabled on the Beacon chain, stETH holders may exchange their stETH to ETH on liquidity pools such as Curve or Balancer.

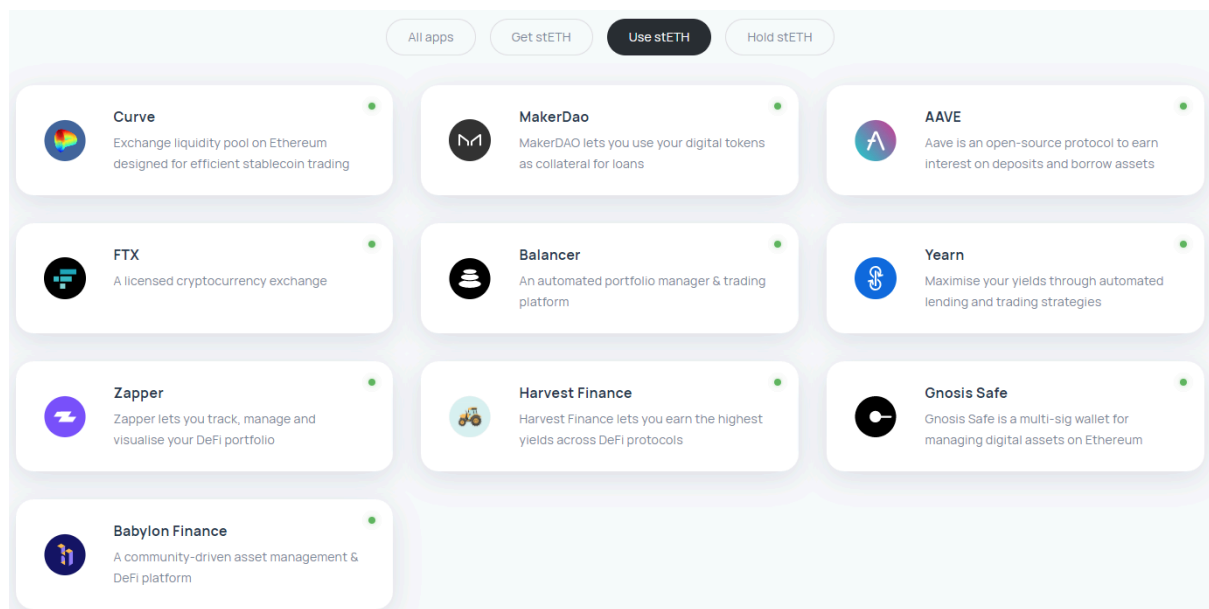
Look, I find something funny here: It means that I can stake 10 ETH with Lido and receive 10 stETH, then I can swap these stETH to ETH on liquidity pools, take Curve for example, 10 ETH can exchange for 9.6 stETH. And I stake these 9.6 ETH with Lido again. In theory, my assets can be magnified **25 times** with a 0.9628 exchange rate.



But during the whole process, Lido will receive fees( my other assets in my wallet) again and again. Lido applies a 10% fee on a user's staking rewards. This fee is split between node operators, the DAO, and a coverage fund.



The picture below lists the products that users can use stETH:



## 2.2.2 Necessary statistics

Lido has 18006 holders, and it gains 7.6 billion dollar TVL, and if we make it deleverage by 25, it's 0.29b.

Tokenholders	Circulating market cap	Total revenue 30d	Protocol revenue 30d	TVL
18,006	\$1.37b	\$22.00m	\$2.20m	\$7.6b

We can see the details of five networks staking on Lido from the sheet below. Now Kusama has the highest APR which is 18%, and ETH has the most staked amount. Most of the stTokens have less value than staked tokens, except MATIC, but the stakers of MATIC is the least.

Network	APR	Staked token	Staked Value \$	st Token MC \$	Stakers	Token Paid	Value Paid \$	Paid ratio
ETH	3.90%	4,271,391 ETH	7,406,186,859	7,145,224,910	92,915	114,739 ETH	199,007,587	2.69%
Solana	5.50%	3,118,005 SOL	133,233,900	132,963,165	15,481	97,188 SOL	4,152,884	3.12%
Polygon	8.70%	35,380,994 MATIC	32,920,104	33,010,113	779	1,147,401 MATIC	1,070,514	3.25%
Polkadot	16.50%	1,063,509 DOT	9,743,716	9,700,140.84	9,169	11,010 DOT	99,881	1.03%
Kusama	18.00%	61,672 KSM	4,034,538	4,025,975.11	1,361	2,167 KSM	141,478	3.51%
<b>Total</b>			<b>7,586,119,117</b>	<b>7,324,924,304</b>			<b>204,472,344</b>	<b>2.70%</b>

Lido has also built a liquidity pool for stETH on the Curve platform, with over \$1.07 billion worth of stETH locked in Curve's stETH-ETH pool. This increases the ease with which stETH holders can exchange back to "pure" ETH.

Curve pool	Currency reserves
ETH	196,953.14
stETH	627,224.82
ETH+stETH	824,177.96
USD value	\$1.4b






## 2.2.3 Token Economics

LDO is an Ethereum token granting governance rights in the Lido DAO. The Lido DAO governs a set of liquid staking protocols, decides on key parameters such as fees and executes protocol upgrades to ensure efficiency and stability.

LDO has a total of 1 billion tokens, the initial distribution is as follows:

- Investors in the seed round received 221.8 million (22.18%)
- Team members will get a total of 350 million pieces (35% )
- Validation nodes and multi-signature members will receive 65 million (6.5%)
- The DAO Treasury controls 363.2 million tokens (36.32%)

<b>Price:</b>	<b>\$2.36</b>
<b>Token holders:</b>	<b>18,006</b>
<b>Circulating Supply:</b>	<b>312,951,153.96 (31%)</b>
<b>Market Cap:</b>	<b>\$738,916,616</b>
<b>TVL:</b>	<b>\$7.6b</b>
<b>Market Cap / TVL Ratio:</b>	<b>0.0955</b>

Lido DAO Markets										
			Spot			Perpetual			Futures	
									Pair	
#	Source	Pairs	Price	+2% Depth	-2% Depth	Volume	Volume %	Confidence	Liquidity	Updated
1	 Binance	<a href="#">LDO/USDT</a>	\$2.36	\$379,632.39	\$210,055.71	\$21,905,836	23.20%	High	571	Recently
2	 Binance	<a href="#">LDO/BUSD</a>	\$2.36	\$76,071.52	\$119,018.83	\$5,620,461	5.95%	High	523	Recently
3	 Gate.io	<a href="#">LDO/USDT</a>	\$2.36	\$33,400.23	\$91,785.63	\$2,260,528	2.39%	High	458	Recently
4	 KuCoin	<a href="#">LDO/USDT</a>	\$2.36	\$33,050.51	\$62,863.13	\$546,190	0.58%	High	472	Recently
5	 Binance	<a href="#">LDO/BTC</a>	\$2.36	\$20,158.97	\$24,053.67	\$523,054	0.55%	High	854	Recently

## 2.3 Rocket Pool

As discussed above, assets staked in Lido can be magnified up to **25 times**, so let's see the new data after deleveraging.

In this situation, Rocket Pool has the most market share with a 0.32 billion TVL.

Eth2 liquid staking list (deleveraged)			
pool	eth_staked	market_share	usd_tvl
Lido	165,694	27.33%	\$265,877,054
Rocket Pool	204,304	33.70%	\$327,832,328
Stakehound	63,009	10.39%	\$101,106,242
Stkr	61,334	10.12%	\$98,418,288
Stakewise	58,676	9.68%	\$94,152,973
CREAM	25,190	4.16%	\$40,420,196
SharedStake	16,000	2.64%	\$25,674,080
Stafi	12,023	1.98%	\$19,293,008
Total	606,230	100.00%	\$972,774,168

### 2.3.1 What is Rocket Pool?

Rocket Pool nodes only need to deposit 16 ETH per validator. This will be coupled with 16 ETH from the staking pool (which stakers deposited in exchange for rETH) to create a new ETH2 validator. This new validator is called a minipool.

To the Beacon chain, a minipool looks exactly the same as a normal validator. The only difference is in how the minipool was created on the ETH1 chain, and how withdrawals work when the node operator decides to voluntarily exit the minipool or gets slashed. All of the creation, withdrawing, and rewards delegation is handled by Rocket Pool's smart contracts on the ETH1 chain.

As a Rocket Pool staker, you can stake as little as 0.01 ETH. Once you stake, you will be given a token called rETH. rETH represents both how much ETH you deposited, and when you deposited it. The value of rETH is determined by the following ratio:

$$\text{rETH:ETH ratio} = (\text{total ETH staked} + \text{Beacon Chain rewards}) / (\text{total rETH supply})$$

This means that rETH's value effectively always increases relative to ETH.

Currently, the ETH:rETH ratio is around 1: 0.9676.

As long as you are holding rETH, you are staking with Rocket Pool! You do not need to get it from Rocket Pool directly. For example, you can purchase rETH on an exchange. But you can't exchange rETH to ETH now.

Rocket Pool has also built a liquidity pool for rETH-wstETH on the Curve platform, with over worth of \$8.8 million TVL.

Curve pools				
<div> <span>rETH</span> <span>All</span> <span>USD</span> <span>BTC</span> <span>ETH</span> <span>Crypto</span> <span>Others</span> <span>My Dashboard</span> </div>				
[X] Hide very small pools				
Pool	Base vAPY ?	Volume ▼	TVL	
 <b>rETH</b> <span>ETH</span> ETH+rETH	<b>1.41%</b> + \ % + \ % FIS	<b>\$258.7k</b>	<b>\$4.8m</b>	
 <b>rETH/wstETH</b> <span>USD</span> <span>FACTORY</span> rETH+wstETH	<b>0.14%</b>	<b>\$177.2k</b>	<b>\$8.8m</b>	

## 2.3.2 Comparison with Lido

Here is the difference between Lido and Rocket Pool:

- Validators of Lido are selected by Lido DAO through governance, but the Rocket Pool protocol is permissionless. Anyone can become a node operator in Rocket Pool by creating a "minipool": for this, the node operator needs to deposit 16 ETH and the rest 16 ETH from user deposits. In addition, "mini-pool" operators need to stake at least 1.6 ETH worth of RPL tokens.
- Lido has a multi-chain expansion strategy as we discussed above, however, Rocket Pool Currently focuses on Ethereum.
- stETH can be used as collateral in Aave and Fuse, and can also be used to mint stablecoins

## 2.3.3 Token Economics

RPL is the Rocket Pool protocol token. RPL is used for participating in RP governance and must be staked by nodes to create a MiniPool. When a node

operator provides an amount of RPL as collateral in the form of an insurance promise, they are rewarded with RPL rewards from the generated inflation respective to the amount of collateral they provide every 28 days. The minimum collateral required is currently 10% of the ETH value and capped at a maximum of 150%. The initial circulation is 18 million pieces and the inflation will be 5% per year. All the RPL of inflation will be allocated to:

- ①Node operators using RPL as insurance collateral (70%)
- ②Oracle DAO members who provide various oracle data (15%)
- ③Protocol DAO Treasury (15%) to finance decentralized development

Price:	\$29.41
Token holders:	3,442
Circulating Supply:	16,191,801 (90%)
Market Cap:	\$474,831,160
TVL:	\$566.54m
Market Cap / TVL Ratio:	0.8535
Total RPL Staked:	6,447,604( 34.50%)

Rocket Pool to USD Chart



Rocket Pool Markets										Pair	All
#	Source	Pairs	Price	+2% Depth	-2% Depth	Volume	Volume %	Confidence	Liquidity	Updated	
1	Uniswap (V3)	WETH/RPL	\$27.19	-	-	\$1,379,010	59.30%	N/A	-	Recently	
2	CoinEx	RPL/USDT	\$30.89	-	-	\$4,693	0.20%	High	26	Recently	
3	XT.COM	RPL/USDT	\$27.15	\$111.07	-	\$15,172	0.65%	Moderate	6	Recently	
4	BKEX	RPL/USDT	\$27.11	\$50,838.79	\$55,638.40	\$800,759	34.43%	Moderate	221	Recently	
5	Hoo	RPL/USDT	\$22.10	\$395.35	\$418.47	\$126,033	5.42%	Moderate	10	Recently	

## 2.4 Summary

Metrics	LDO	RPL
Price:	\$2.36	\$29.41
Token holders:	18,006	3,442
Circulating Supply:	312,951,153.96 (31%)	16,191,801 (90%)
Market Cap:	\$738,916,616	\$474,831,160
TVL:	\$7.6b	\$566.54m
Market Cap / TVL Ratio:	0.0955	0.8535
Curve Pool TVL:	\$1.3b	\$8.3m
Financing:	\$140 m	--

From a strategic point of view, Rocket Pool is currently focusing on Ethereum while Lido adopts a multi-chain strategy and has carried out deep cooperation with DeFi protocols, making stETH much more attractive than rETH, so Lido is with greater scalability and capital efficiency.

From a token perspective, LDO tokens lack utility, so users have no natural demand for the token. Additionally, the LDO token faces selling pressure from holders as it is used to incentivize liquidity. So it's maybe difficult for LDO to retain value for a long time in its current form. The RPL token, on the other hand, has utility due to node staking and ties the demand for the token to the growth of the Rocket Pool protocol. As more and more users deposit ETH into Rocket Pool and more node operators go online, the demand for RPL purchases will increase due to the large demand for pledge.

The Merge is approaching, and it is believed that both LDO and RPL are expected to see considerable growth in prices. Next, we should pay attention to:

As for LDO, pay attention to the project's actions to empower the token economy, and drive the increase in the purchase demand for LDO.

As for RPL, pay attention to the data of the project. First, cooperation with more DeFi protocols to fully release the liquidity of rETH, which can attract more users to stake. The second is to pay attention to the number of nodes. More nodes means that more RPL may be pledged as insurance, reducing the external circulation.

### 3、Ethereum 2.0 Infrastructures

#### 3.1 SSV.Network

SSV is an infrastructure serving validators, but SSV does not do asset management work, that is, SSV does not absorb users' ETH and then combine them. SSV mainly serves two types of users, one is long-term holding positions, and needs to ensure the safety of funds. One is the value capture of SSV, a group of ETH pledge service providers led by Lido, Rocketpool, and Binance. SSV helps staking operators reduce operation and maintenance pressure, reduce equipment server expenditure and management costs, reduce security risks, and is convenient and worry-free.

The core of SSV technology is to allow users to encrypt the validator key and divide it into multiple shares and distribute them to different node operators, and SSV technology can ensure that even if one or several operators (within a certain threshold) are offline or there is malicious behavior, which still does not affect the verification result of the entire validator (signature can still be executed effectively).

The SSV network is currently in beta, with over 16,000 validators and over 3,000 node operators working on the testnet at the time of writing.



Regarding the scalability of SSV technology, logically, SSV technology can be extended to all PoS public chains (such as Atom) where the withdrawal private key and operation key are separated, it is expected that SSV technology will be extended to other public chains.

In financing, SSV has raised a total amount exceeding \$20 million. In addition to this, SSV has received \$188,000 in grants from the Ethereum Foundation. There are a total 14 grant recipients in the ssv.network ecosystem, including Lido, Ankr, stader Labs, and Swell network.

ssv.network to USD Chart



ssv.network Markets

ssv.network Markets

Spot

Perpetual

Futures

Pair

All

#	Source	Pairs	Price	+2% Depth	-2% Depth	Volume	Volume %	Confidence	Liquidity	Updated
1	Gate.io	SSV/USDT	\$11.46	\$425.09	\$912.64	\$134,996	4.88%	High	212	Recently
2	Gate.io	SSV/BTC	\$11.32	\$3,136.83	\$1,021.99	\$39,647	1.43%	High	141	Recently
3	Gate.io	SSV/ETH	\$11.40	\$1,217.03	\$1,415.82	\$35,579	1.29%	High	193	Recently
4	MEXC	SSV/USDT	\$11.61	\$15,415.92	\$8,136.88	\$1,810,207	65.47%	Moderate	254	Recently
5	Uniswap (V3)	SSV/WETH	\$11.60	-	-	\$206,881	7.48%	N/A	-	Recently

## 3.2 Other Infrastructures

The table below are other infrastructure tools focused on ETH2.0, among which Obol has raised \$6.15 million in a seed funding round. The Obol network will essentially allow staking with multiple validator operators.

Open-Source Software on ETH2.0		
Project	Name	Description
Chainsafe	Lodestar	Ethereum 2.0 Implementation in Typescript
Sigma Prime	Lighthouse	implementation of the Ethereum 2.0 specification written in Rust.
Prysmatic Labs	Prysm	A full-featured client for the Ethereum Proof-of-Stake protocol, written in Go
Obol	Charon	Distributed Validator Cluster



## 4、Summary

Since 2017, Vitalik Buterin has proposed to switch from PoW to PoS in 2019.

Although he encountered various difficulties and delays, he still persevered, which shows his confidence.

Merge and subsequent sharding will make Ethereum more scalable and provide a better user experience.

Then what makes ETH more valuable? The staking rewards and the deflation of ETH plus the liquidity of collateralized derivatives(stETH/ rETH) attract people to buy and hold ETH. What about the ecosystem after Merge? Similar to the Cosmos ecosystem, they don't need to stake ETH like projects in the Polkadot ecosystem, contributing no other value except gas fee. It is worth thinking about what if someday people won't want to invest in ETH due to the high cost?

Anyway, as long as POS exists, ssv technology will always be in need until newer technologies appear to substitute, so maybe we should pay more attention to I think the value of ssv.