

REPORT

# Ethereum 2.0 Staking Ecosystem Report

A user report on the landscape of existing ether holders and their intentions, preferences, motivations, and pain points when it comes to staking on the Ethereum 2.0 network.

REPORT

# Outline

<b>Executive Summary</b>	3
<b>Glossary</b>	4
<b>Introduction to Ethereum 2.0</b>	5
Understanding Ethereum 2.0	6
What is Phase 0?	7
<b>Research Objectives and Methodology</b>	8
<b>Macro Research Findings</b>	9
<b>Detailed Research Findings</b>	14
Respondents Who Plan to Run Their Own Validators	14
Respondents Who Plan to Use a Third Party Provider	19
Respondents Who Are Undecided About Staking	22
Respondents Who Do Not Plan to Stake	26
Staking Providers	28
<b>Discussions and Recommendations</b>	33
<b>Conclusion</b>	38
<b>Authors</b>	39

# Executive Summary

The launch of the first phase of Ethereum 2.0 this year will mark the beginning of the next evolution of the public Ethereum mainnet. One of the most significant upgrades in Ethereum 2.0 is the switch from a Proof of Work (PoW) to a Proof of Stake (PoS) consensus algorithm. This upgrade will result in improved scalability, network maintenance incentives, energy efficiency, and security.

This new network architecture provides a novel opportunity for a broad category of ETH holders to create a continuous revenue-generating capability for providing public infrastructure to the Ethereum community.

Core to the success of a PoS network is the willingness of participants to stake their ether (ETH) on the network in order to adequately secure the blockchain. It is imperative, therefore, to understand the staking preferences,

behaviors, and needs of existing ETH holders and how their participation in Ethereum 2.0 can be accelerated and optimized.

Pursuant to this objective, ConsenSys has conducted a wide-ranging quantitative user research study to drive the industry's collective understanding of ETH holders' behaviors, motivations, needs, and pain-points when it comes to staking on Ethereum 2.0.

Broad conclusions were drawn from 287 respondents to an online survey of existing ETH holders. Respondents were categorized based on their participation preferences for Eth2 staking, enabling the identification of common and diverging goals, needs, and characteristics. The four primary participant behaviors determined from the survey include:

PLANNING TO RUN THEIR OWN VALIDATOR NODES: <b>32.8%</b>	PLANNING TO USE A THIRD PARTY STAKING PROVIDER: <b>33.1%</b>
<ul style="list-style-type: none"> <li>Hold the relatively largest amount of ETH.</li> <li>Self-reported to have the soundest understanding of Eth2 economics.</li> <li>Store the majority of their ETH on hardware wallets.</li> <li>Expect an average of 5.8% annualized rewards.</li> <li>Indicated majority participation for Phase 0.</li> <li>Care most about slashing protection and enhanced node management features.</li> </ul>	<ul style="list-style-type: none"> <li>Hold more than 32 ETH on average.</li> <li>Self-reported to have a base level understanding of Eth2 economics.</li> <li>Exhibit the relatively highest ratio of storage of ETH on an exchange.</li> <li>Expect an average of 7.6% annualized net rewards.</li> <li>Care most about compounding options and enhanced portfolio management features.</li> </ul>
UNDECIDED IF THEY WILL STAKE THEIR ETH OR NOT: <b>14.6%</b>	NOT PLANNING ON STAKING THEIR ETH: <b>2.8%</b>
<ul style="list-style-type: none"> <li>Hold more than 32 ETH on average.</li> <li>Self-reported to have the lowest understanding of Eth2 economics.</li> <li>Store the majority of their ETH on hardware wallets.</li> <li>Indicated desire to wait and see as primary reason for undecidedness.</li> <li>Expect an average of 9.4% annualized rewards.</li> <li>Care most about risk mitigation features including slashing protection, liquidity options, and insurance.</li> </ul>	<ul style="list-style-type: none"> <li>Hold less than 32 ETH on average.</li> <li>Self reported to have the lowest understanding of Eth2 economics.</li> <li>Store the majority of their ETH in non-custodial wallets.</li> <li>Indicated insufficient ETH holdings as the primary reason for non-participation.</li> </ul>

This report aims to inform key design and product considerations to encourage the broadest possible participation from different user personas, while providing informative analysis and strategic recommendations for protocol teams, client developers, and third-party staking providers. Our findings indicate that education, trust, incentives, value-added features, and potential risk mitigants play a critical role in driving confidence and adoption among existing ETH holders.

# Glossary

## **Proof of Work (PoW):**

Proof of Work is a class of consensus algorithm that rewards miners who solve mathematical problems to propose and/or attest new blocks. With PoW, the probability of mining a block and thus receiving block rewards is a function of relative hash power in the network.

## **State:**

State is the entire set of information that describes a system at any point in time. On Ethereum, this is the current account set containing balances, smart contract code, and nonces at any given moment. Each transaction alters this state into an entirely new state.

## **Beacon Chain:**

The beacon chain stores and manages the registry of validators, and will implement the Proof of Stake consensus mechanism for Ethereum 2.0. The beacon chain will be launched in the first phase of Ethereum 2.0, known as Phase 0.

## **eWASM:**

Ethereum WebAssembly (eWASM) is a proposed redesign of the Ethereum smart contract execution layer that uses a deterministic subset of WebAssembly, an open standard instruction-set developed by a W3C (World Wide Web Consortium) community group.

## **Staking Pool**

Ethereum 2.0 will require a validator to deposit a minimum of 32 ETH to be eligible to become a validator. Hopeful validators who do not possess 32 ETH to become a validator will need to pool funds together with other ETH holders for staking, similar to the concept of pooling hashing power in mining pools. Thus, individuals can stake smaller amounts of ETH by staking in a pool offered by third party providers or joining a trustless staking pool (currently in research stage).

## **Proof of Stake (PoS):**

Proof of Stake (PoS) is a class of consensus algorithm that selects and rewards validators as a function of a validator's economic stake in the network. Unlike Proof of Work, the probability of creating and/or attesting a block and maintaining security in the network is not a result of hashpower from burning energy, but rather the result of economic value-at-loss.

## **Sharding**

Sharding is a form of database partitioning, also known as horizontal partitioning, wherein large databases are divided into smaller, more manageable clusters to improve performance and lower query time.

## **Deposit Contract:**

In order to register as a validator on the beacon chain, a user must generate new Ethereum 2.0 keys by depositing ETH in the official deposit contract on the Eth2 Launchpad hosted by the Ethereum Foundation and developed ConsenSys Activate (coming soon).

## **Staking Provider:**

Service providers such as Staking-as-a-Service providers and/or Staking Pools that create, propose, or vote on blocks added to the blockchain on behalf of token holders.

## **Custodial Provider:**

Infrastructure providers, such as Staking-as-a-Service providers, are non-custodial if they do not have control over users funds. Custodial providers or solutions include the management and custody of a user's private keys.

## **Staking Derivatives**

Staking derivatives are tokenized representations of underlying staking positions that can be traded across token holders.

# Introduction to Ethereum 2.0

Today, Ethereum is the second largest blockchain by market cap, yet the most widely used by number of transactions per day. Despite its broad usage and rapid maturation over the past five years, the Ethereum network of today is a prototype for the global world computer of tomorrow.

The long-anticipated launch of Ethereum 2.0 (Eth2) presents a critical ecosystem milestone. This new network architecture provides a novel opportunity for a broad category of ETH holders to create a continuous revenue-generating capability for providing public infrastructure to the Ethereum community.

Decentralization has always been a fundamental design goal of Ethereum 2.0. By transitioning to Proof of Stake, Eth2 will enable a typical consumer-grade laptop or small hosted virtual private server (VPS) to participate in the Ethereum consensus

process. However, actual participation of ‘average validators’ is a necessity to drive decentralization in Ethereum 2.0 and contributes to the long-term security of the network.

This study has been structured to identify the different types of validators on Eth2 and their behaviors, needs, and desires — as well as presenting solutions to identified pain-points.

**This new network architecture provides a novel opportunity for a broad category of ETH holders to create a continuous revenue-generating capability for providing public infrastructure to the Ethereum community.**

## Understanding Ethereum 2.0

Ethereum 2.0 is an upgrade from Ethereum 1.0's current Proof of Work consensus model to Proof of Stake (PoS), which allows for improved scalability, throughput, and security of the public mainnet.

It includes a variety of new features aimed to address the "Scalability Trilemma," a concept in distributed system architecture that currently prevents blockchains from achieving the scalability required for mass adoption. For Ethereum and many other blockchains today, the scalability trilemma is the result of consensus designs that require every node to verify and execute every transaction. This consecutive verification renders the network unable to process more transactions than any single network node is capable of, limiting the scalability potential of the whole (particularly as the data burden grows over time).

To combat the scalability trilemma, Eth2 will implement a "sharded" protocol design. Sharding is a form of database partitioning, also known as horizontal partitioning, where large databases are divided into smaller, more manageable clusters to improve performance and lower query time. Sharding is not new to distributed systems; the concept has been around in traditional centralized database management since the late '90s.

Shards in the context of Eth2 can be understood as 64 independent blockchains that operate in sync with the existing Eth1 chain. Shards communicate and coordinate network state and transactions via the root chain, which is called the beacon chain.

Each shard chain will relay information to the beacon chain and will be enabled by a dedicated virtual machine and execution environment called eWASM.

Ethereum 2.0 is a pure Proof of Stake system, on which participating validators are required to stake their ether in addition to providing compute resources to secure the network by proposing and attesting blocks. In return for their contributions, validators will earn periodic payouts if they follow the rules of the protocol. Alternatively, validators will be penalized if they act maliciously or are offline.

Reward rates, expected to range from 2.7%–20%<sup>1</sup>, are driven by a number of exogenous and endogenous factors including: validator behavior, the total amount of ETH staked on the network, and the average uptime of all active network validators.

There are two ways for ETH holders to participate and earn staking rewards on Ethereum 2.0. ETH holders can run their own validator(s) by staking 32 ETH increments into the official deposit contract. Alternatively, ETH holders who do not wish to run their own infrastructure may stake through a staking provider and/or join a staking pool.

<sup>1</sup> Expected reward range between 30M to 524,288 total ETH staked in the network.

## What is Phase 0?

Ethereum 2.0 is planned to roll out in three phases: Phase 0, 1, and 2. Phase 0 is scheduled to launch in Q3 2020 with upgrades to Phase 1 and 2 released in the coming years.

PHASE 0 (HEART)	PHASE 1 (LIMBS)	PHASE 2 (BRAIN)
<b>Beacon Chain Q3 2020</b> <ul style="list-style-type: none"> <li>• 16,384 (~524,288 Ether Staked) required to hit genesis</li> <li>• Managing Validators &amp; Stakes</li> <li>• Applying Consensus Rules (Casper FFG)</li> <li>• Rewarding and Penalizing/Slashing</li> </ul>	<b>Shards 2021</b> <ul style="list-style-type: none"> <li>• Basic sharding (64 shards as simple data containers)</li> <li>• No ability to process or structure data within shards</li> <li>• Ensure shard chains can communicate with each other and beacon chain</li> <li>• Dapps can store data on shards while using security guarantee of ETH1</li> </ul>	<b>Execution 2022</b> <ul style="list-style-type: none"> <li>• Execution Environments (EE's)</li> <li>• Smart Contracts reintroduced</li> <li>• Shards transition to a structured chain state (transaction processing)</li> <li>• Developers will be able to create EE's that mimic zCash, BTC, etc.</li> </ul>

Figure 1: The Phases of Ethereum 2.0.

During Phase 0, the beacon chain will be implemented. The beacon chain stores and manages the registry of validators, and will implement the Proof of Stake consensus mechanism for Ethereum 2.0, but does not yet include sharding or the capability to process transactions, other than some validator operations. Phase 0 can be thought of as the “heart” of this new system and requires the heaviest technical and coordination lift to implement. The original Ethereum PoW chain will remain fully functional and will continue to run alongside the new Ethereum PoS chain through Phase 1 to ensure data continuity.

In order to launch the Ethereum 2.0 network, the minimum genesis threshold of 16,384 validators or

524,288 ETH (genesis/32) must be reached. Until this security threshold is reached, rewards are not issued to those that deposit ETH, which means a degree of altruism and trust is required socially between validators since it cannot be enforced cryptographically. Once the genesis threshold is reached, all validators will be rewarded for their contribution.

For more information regarding Ethereum 2.0, the beacon chain, and Phase 0, please consult the [ConsenSys Ethereum 2.0 Knowledge Base](#).

# Research Objectives and Methodology

Ethereum 2.0 has been designed to scale to thousands of independent network participants, each with an active stake in maintaining the network. As such, understanding the expectations, needs, and pain-points of those planning to stake on Ethereum 2.0 (or not) is of paramount importance to the broader ecosystem and its enablers.

The key objectives of this research include:

- Understand ETH token holder profiles and behaviors
- Determine pain-points and hurdles to adoption
- Identify market opportunities and enablers

## Methodology

Prior to designing the research, our team identified and conducted various qualitative stakeholder interviews aiming to further understand our questions and assumptions about the Ethereum 2.0 staking ecosystem. With preliminary research findings and fundamental research objectives in mind, our team deployed a quantitative user research study to capture the broad user segments, sentiments, and behavioral patterns to drive the industry's collective understanding of Ethereum 2.0 stakers.

Georgia Rakusen, Lead User Researcher at ConsenSys Codefi, designed and conducted the survey, which was distributed online through crypto and blockchain communication channels including Twitter, Reddit, Discord, Telegram, LinkedIn, and email groups, seeking a wide audience of users who

already own ETH. This study aimed to capture the behaviors and views of people who intend to stake their ETH as well as those who do not.

The survey was initiated in February 2020, and remained live for 20 days. 287 completed responses were logged in that period. User anonymity was protected and no identifying information about respondents was collected. Data was analyzed and responses compared by segment, resulting in the findings detailed in this report. The original survey questions can be found in the following [link](#).

# Macro Research Findings

## Summary

The research study categorized existing ETH holders into distinctive user segments based on their participation preferences for Eth2 Staking. This approach allowed us to identify common and diverging goals, needs, and characteristics to provide concrete evidence on the archetype of existing ETH holders in relation to the Ethereum 2.0 staking ecosystem. The identified user segments included:

- 1) Participants who plan to run their own validator node(s).
- 2) Participants who plan to use a third party staking provider.
- 3) Participants who are undecided.
- 4) Participants who do not plan to stake.

## Staking Preferences

Out of all 287 responses, ~33% intend to run their own validator node(s), ~33% intend to use a third party staking service, ~17% are undecided and ~3% do not intend to stake. In addition, ~17% of responses only partially completed the survey, but indicated wishing to run their own validator node(s)<sup>2</sup>.

Among the respondents who intend to run their own validator nodes, when asked about using a staking service provider, ~20% said they would be interested in using a staking service instead of running their own nodes.

For the 17% who are undecided about how or whether to stake their ETH, ~35% would be likely to use a third party staking service if made available.

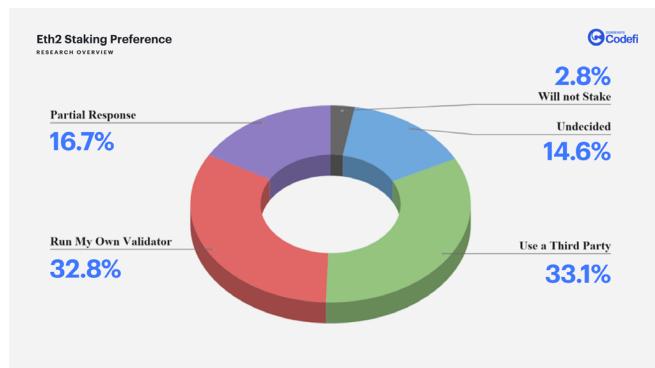


Figure 2: Staking preferences of the 287 survey respondents.

<sup>2</sup> Partial responses were excluded from further analysis for the purpose of this report.

## Portfolio Composition

All respondents of the survey are existing ETH holders. ~56% of all respondents also hold Bitcoin (BTC), ~84% hold stablecoins, and ~20% hold other layer 1 and layer 2 stackable assets including Tezos, Loom, and Matic.

### Which Tokens Do They Own?

RESEARCH OVERVIEW

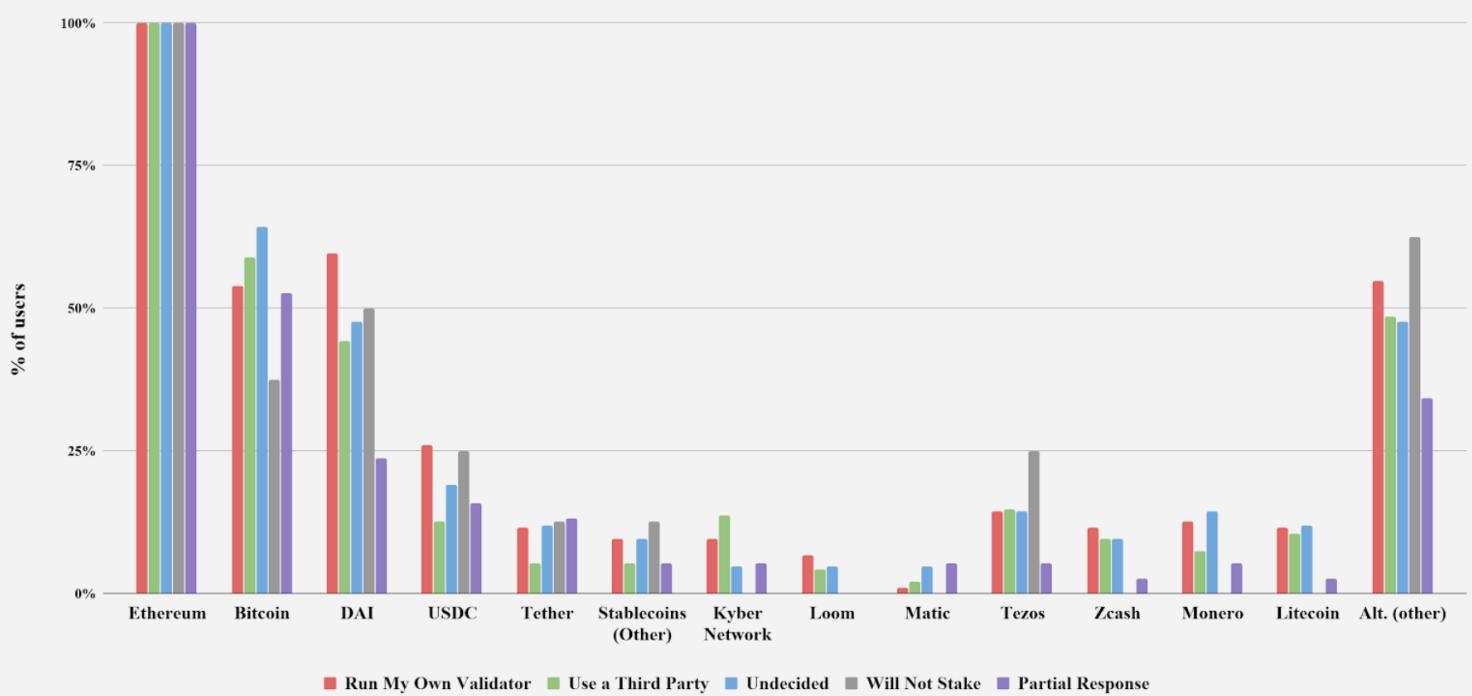


Figure 3: Crypto-asset ownership vs. staking preferences.

## Ether Holdings

The majority of respondents, 63.2%, hold 32 ETH or more, with 22.5% holding less than 32 ETH. The remaining respondents did not disclose their amounts. Those who intend to run their own validator node(s) generally hold larger amounts of ETH and are also less likely to disclose the amounts they hold. The majority of those who do not intend to stake hold less than 32 ETH.

**The majority of those who do not intend to stake hold less than 32 ETH.**

### Amount of Ether Held by User Type

RESEARCH OVERVIEW

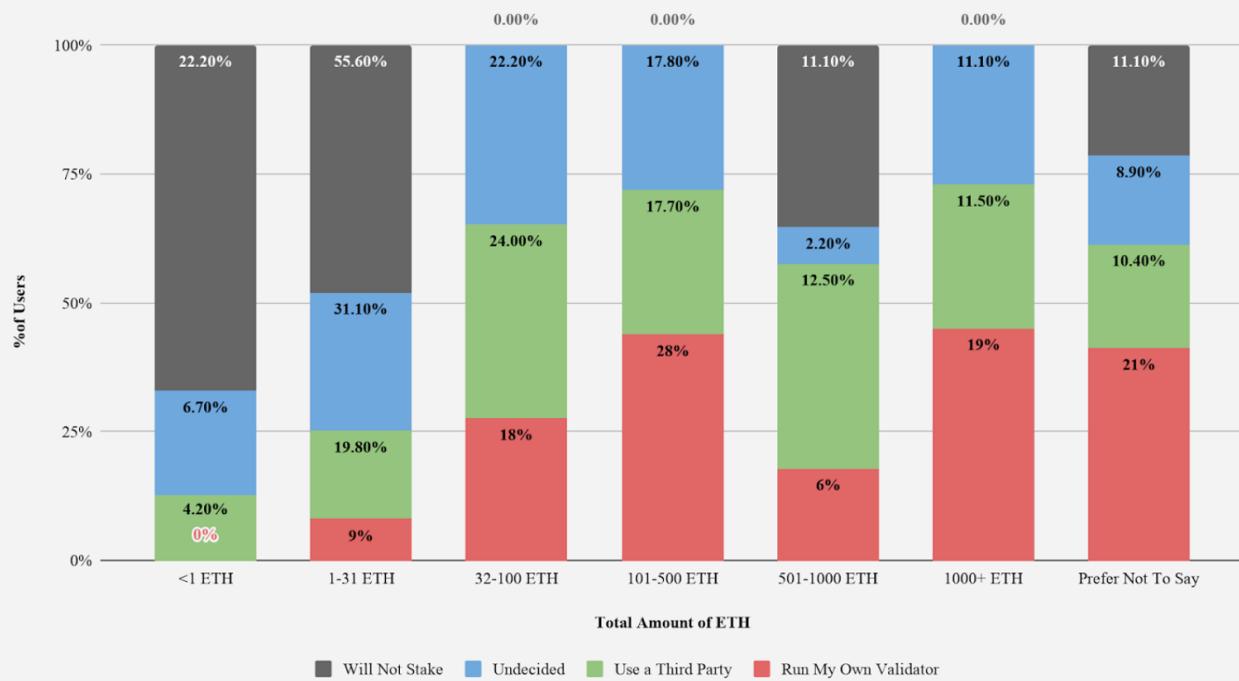


Figure 4: Reported ETH ownership vs. staking preferences.

## Portfolio Management

Approximately 46% of respondents currently manage the majority of their ETH holdings in hardware wallets. This is particularly true for those who intend to run their own validator node(s). However, almost a third (30.2%) of the participants planning to stake their ETH with a staking provider currently hold the majority of their holdings on a centralized exchange, such as Coinbase or Binance.

### How Do They Manage Their ETH?

RESEARCH OVERVIEW

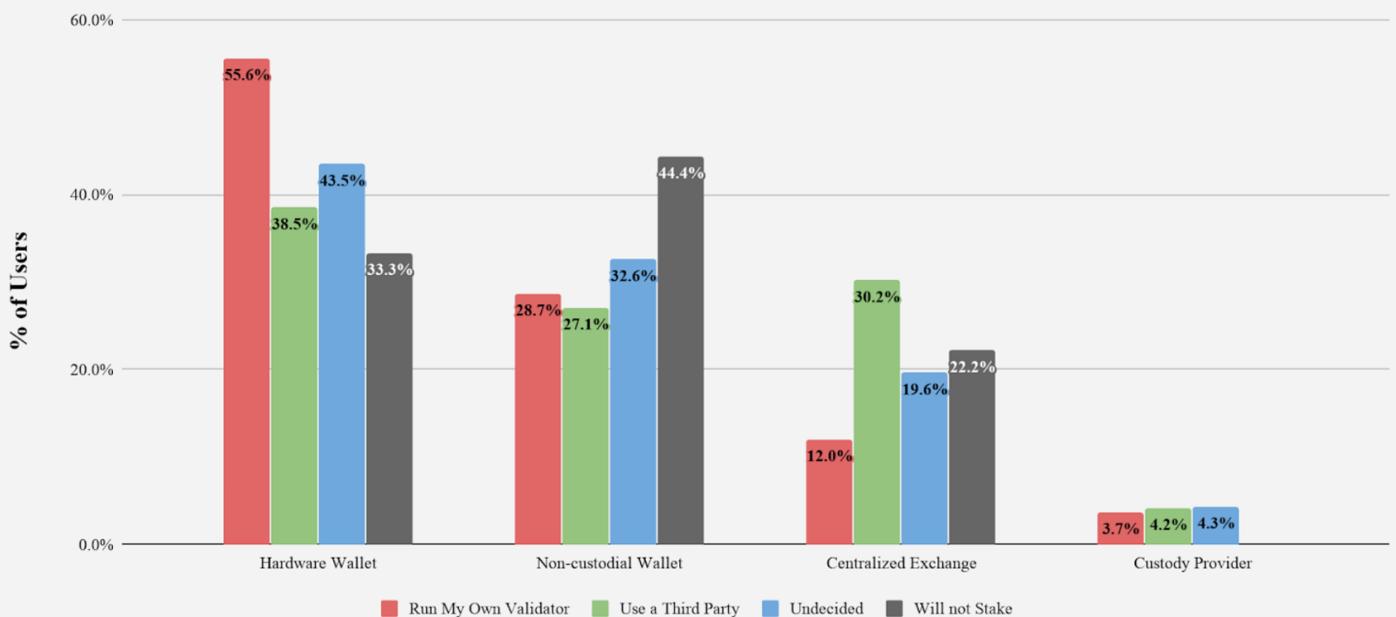


Figure 5: ETH portfolio management vs. staking preferences.

## Understanding of Eth2 Economics

The majority of respondents, 54.7%, indicated they had a general to sound understanding of Eth2 staking rewards, although only 15.8% across all respondents reported a sound understanding. Those who intend to run their own validator node(s) self-reported to be the most knowledgeable, while those who are undecided or do not intend to stake were the least knowledgeable about the anticipated rewards of participation.

### Eth2 Economic Understanding

RESEARCH OVERVIEW

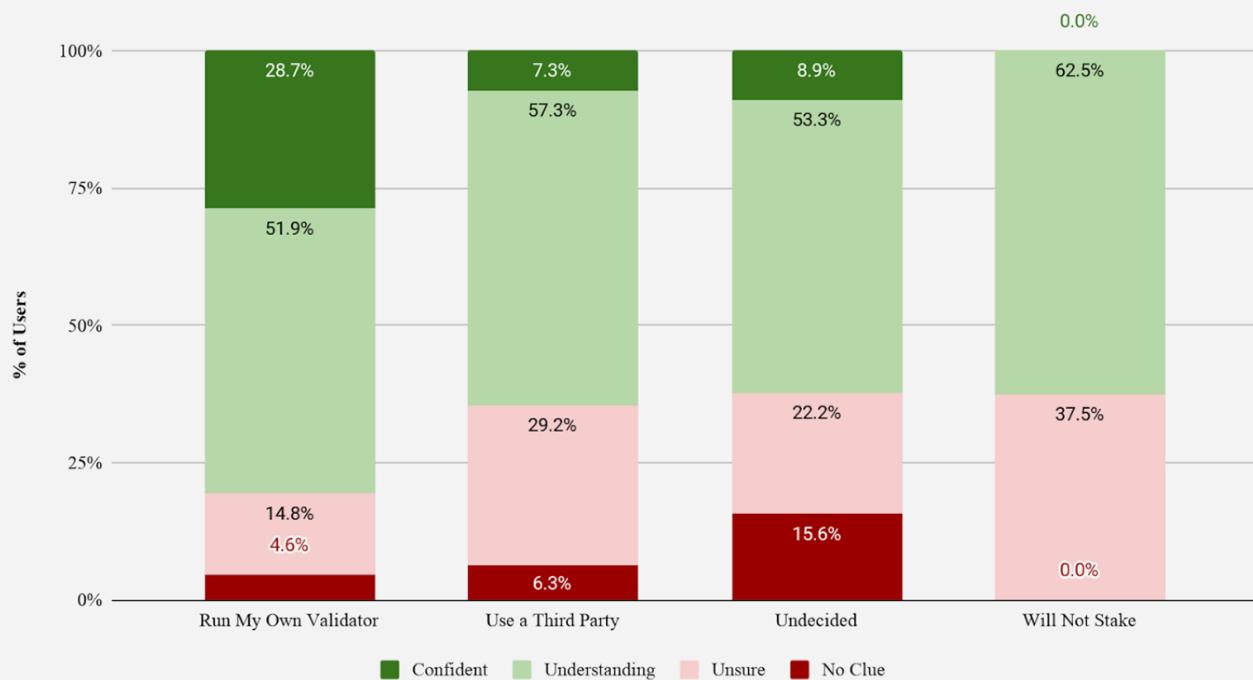


Figure 6: Self-reported understanding of Eth2 economics vs. staking preferences.

# Detailed Research Findings

## Respondents Who Plan to Run Their Own Validators

Respondents who plan to run their own Ethereum 2.0 validator node(s) tended to share the following characteristics, offering a snapshot of the typical user profile:

PLAN TO RUN THEIR OWN VALIDATORS	<ul style="list-style-type: none"> <li>• Hold the relatively largest amount of ETH.</li> <li>• Self-reported to have the soundest understanding of Eth2 economics.</li> <li>• Store the majority of their ETH on hardware wallets (55.6%).</li> <li>• Expect an average of 5.8% annualized rewards.</li> <li>• Indicated majority participation for Phase 0 (63.8%).</li> <li>• Care most about slashing protection and enhanced node management features.</li> </ul>
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The survey posed the following questions to the ~33% of respondents who indicated they plan to run their own validator.

### When Do You Plan to Participate?

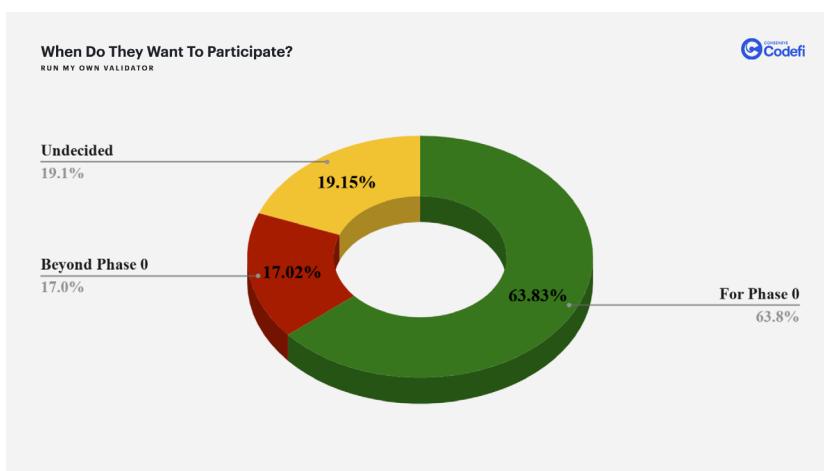


Figure 7: Timing of participation among those planning to run their own validator node(s).

Almost two thirds of respondents who intend to run their own validator node(s) indicated their preference to participate during the initial go-live phase (i.e. Phase 0). In addition, ~17% plan to participate in a subsequent Eth2 phase, while ~19% were undecided.

## How Much Do You Intend to Stake?

Respondents who plan to run their own validator indicated an intent to stake ~51.5% of their existing ETH holdings on average, excluding those who preferred not to disclose.

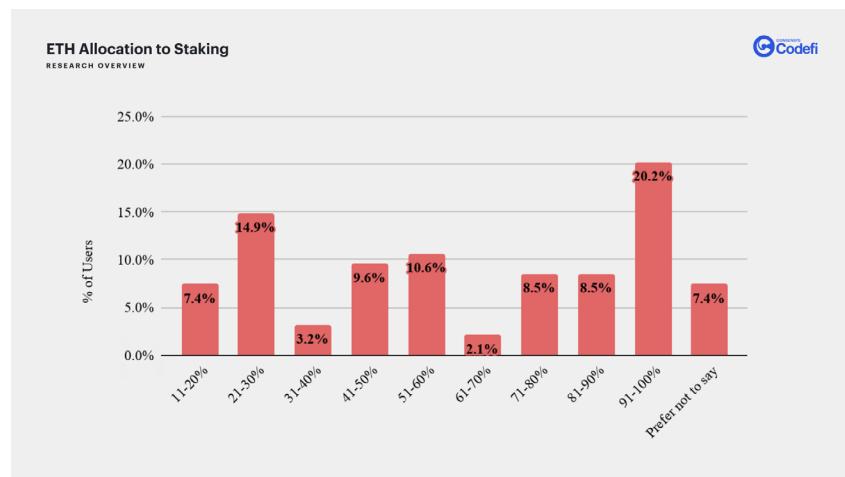


Figure 8: % of total ETH portfolio to be staked among those planning to run their own validator node(s).

## How Many Beacon Nodes Are You Planning to Run?

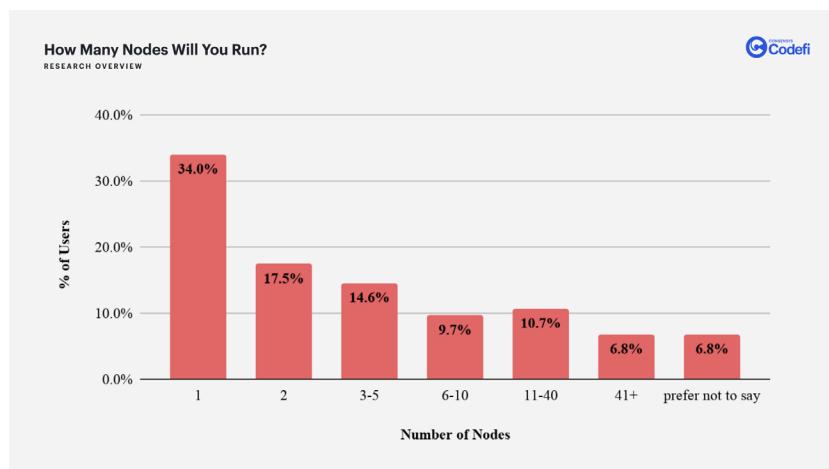


Figure 9: Number of nodes to be run by respondents planning to run their own validator node(s).

The majority of respondents (~66%) plan to run up to five validator nodes or fewer. 34% of respondents plan to run just 1 node, while 27% plan to run more than 5 nodes. The remaining ~7% preferred not to disclose the number of nodes they plan to run.

## What % of ETH Rewards Will Make Running Your Own Validator Node(s) Worthwhile?

We asked participants who plan to run their own validator node(s) what percentage in ETH rewards would make it worth for them to do so. For people who will run their own node(s), half are hoping for 5–10% returns [average 5.8%] in order for it to be worthwhile.

Based on the estimated network rewards for a single validator from 524,288 (genesis) to 5MM ETH staked (20% - 6.7%), these would-be validators should feel incentivized enough to participate.

### Required Reward %

RESEARCH OVERVIEW



Figure 10: Anticipated reward (as % of staked ETH) by respondents planning to run their own validator node(s).

## Which Node Management Features Do You Care About Most?

We asked respondents who plan to run their own validator node(s) which node management features they cared about most. While respondents showed a preference for slashing protection, validators also indicated an interest in enhanced performance monitoring and portfolio management tools.

### Feature Favorites

RUN MY OWN VALIDATOR

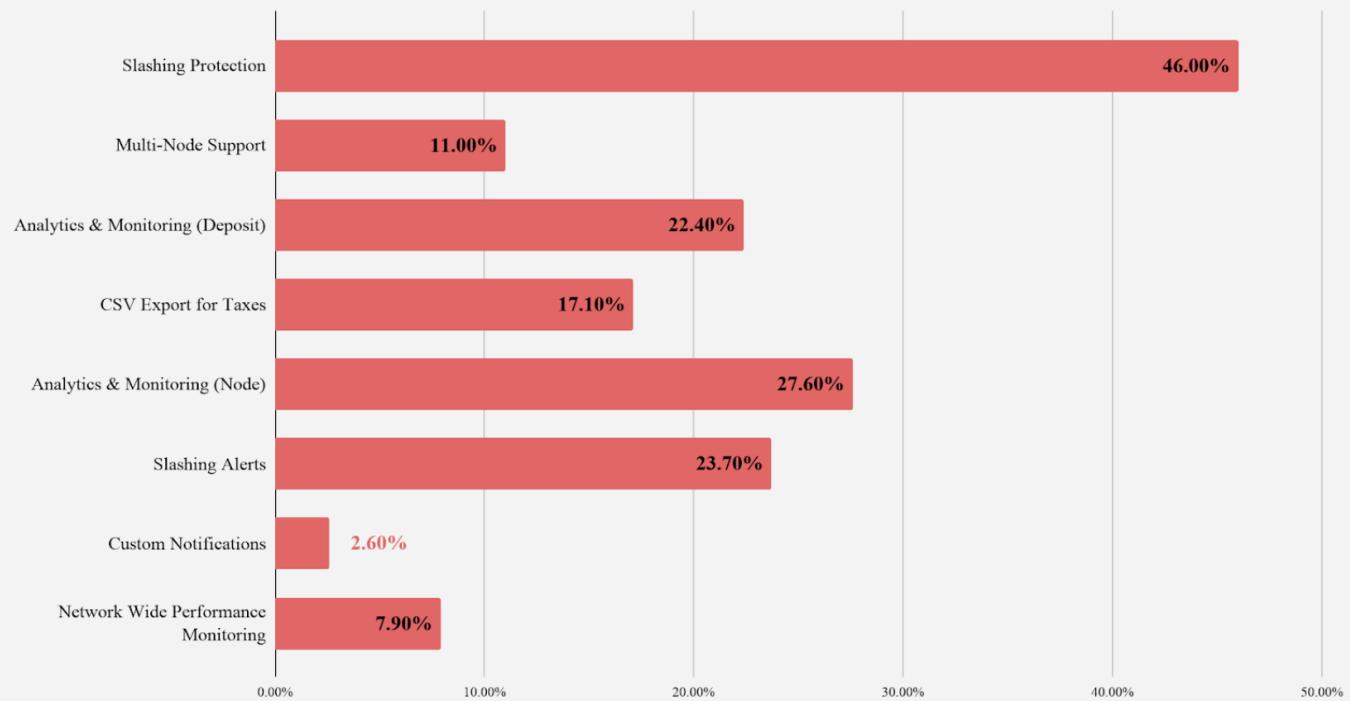


Figure 11: Preferred node management features among respondents who plan to run their own validator node(s).

## What Is Your Interest in Staking With a Third Party Provider?

We asked respondents who plan to run their own validator node(s) about their likelihood of staking with a third party provider instead of running their own validator node(s). Approximately 20% of respondents indicated that they would be interested in using a third party staking service provider instead of running their own nodes, with ~37% unsure.

### Use a Third Party?

RESEARCH OVERVIEW

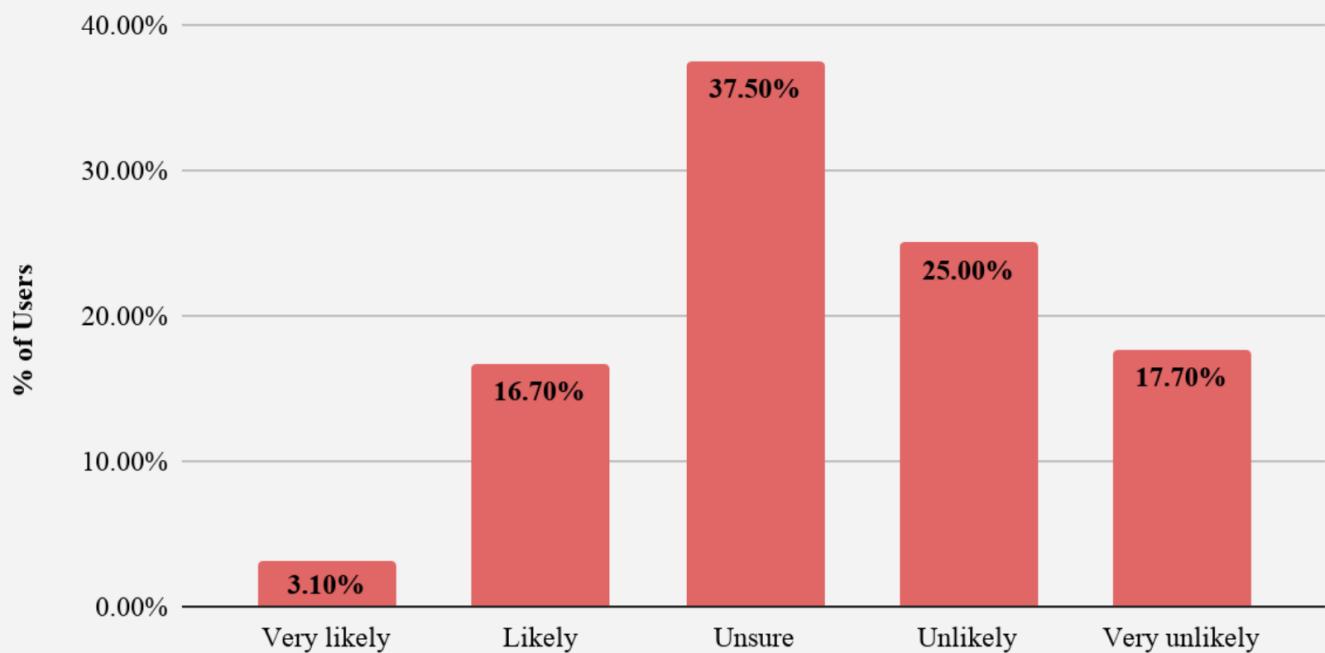


Figure 12: % of respondents planning to run their own validator node(s) who would consider using a third party staking provider instead.

## Respondents Who Plan to Use a Third Party Provider

Among the 19.8% of respondents who indicated that they are “likely” or “very likely” to use a third party staking provider, we observed the following trends:

PLAN TO USE A THIRD-PARTY	<ul style="list-style-type: none"> <li>• Majority holds 32 ETH or more (66%).</li> <li>• Self-reported to have a base level understanding of Eth2 economics.</li> <li>• Exhibit the relatively highest ratio of storage of ETH on an exchange (30.2%).</li> <li>• Expect an average of 7.6% annualized net rewards.</li> <li>• Care most about compounding options and enhanced portfolio management features.</li> </ul>
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The survey posed the following questions to these respondents who indicated they plan to use a third party provider.

### Which Staking Provider Features Do You Care About Most?

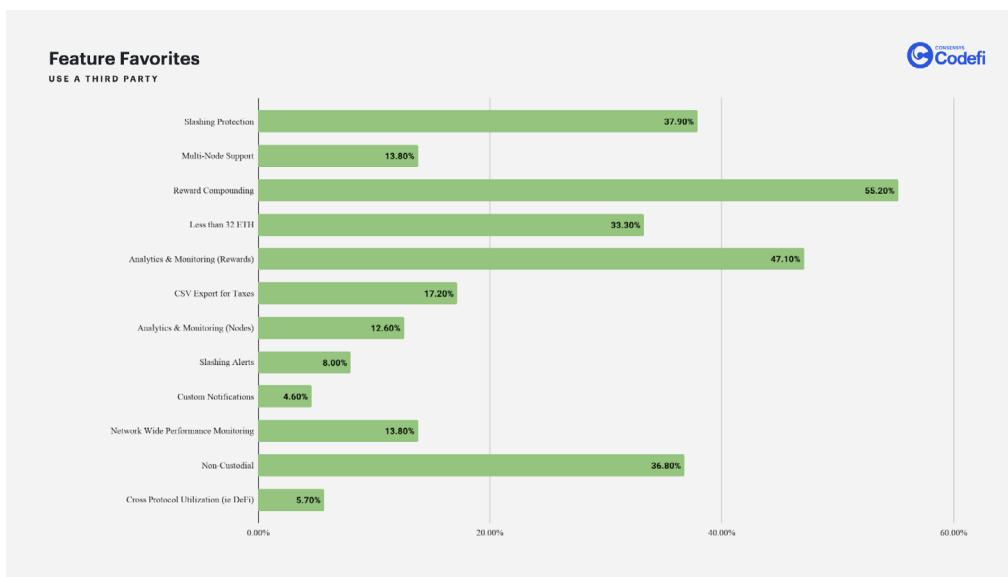


Figure 13: Preferred staking service features among respondents who plan to use a third party provider.

We asked respondents who plan to stake with a provider which features they cared about most. Respondents showed the most preference for a feature that compounds earned interest (55.20%), followed by a dashboard to monitor the performance of deposits (47.10%). Respondents also respectfully noted slashing protection and non-custodial services as desirable features.

## What Proportion of Your ETH Holding Do You Intend to Stake?

### ETH Allocation to Staking

RESEARCH OVERVIEW

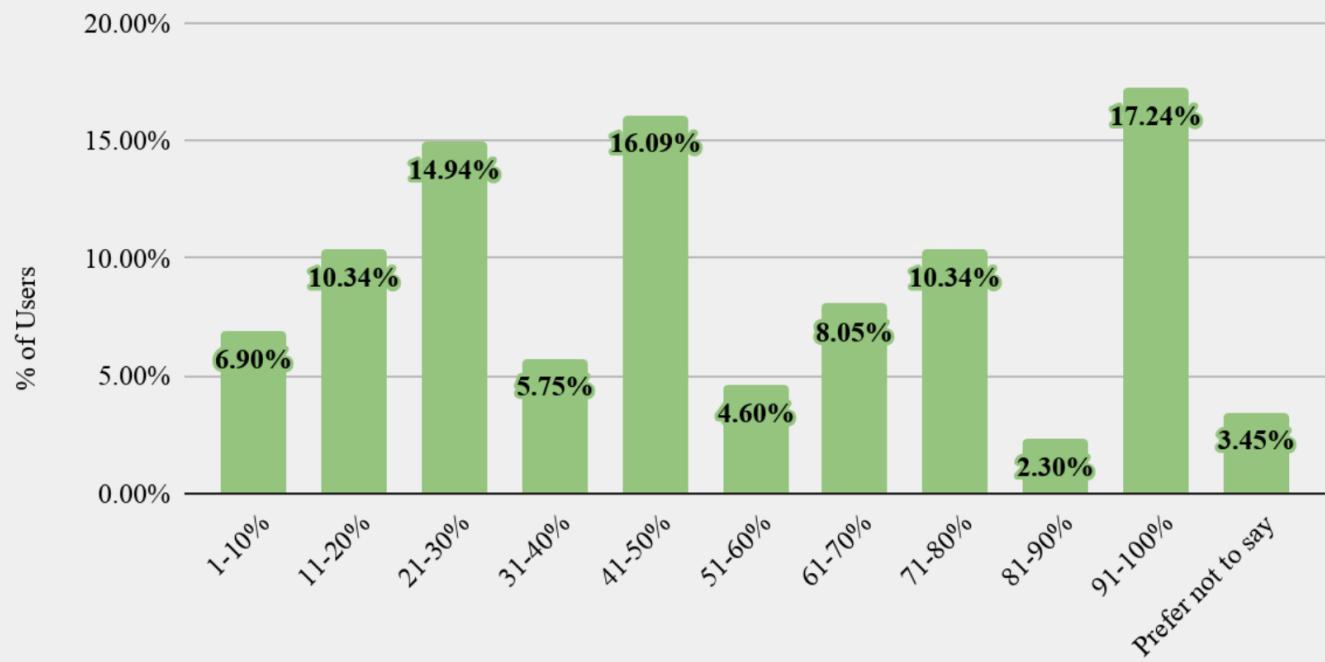


Figure 14: % of total ETH portfolio to be staked among respondents who plan to use a third party provider.

**Respondents who plan to use a third party indicated an intent to stake 50% of their existing ETH holdings on average, excluding those who preferred not to disclose.**

## What Is a Worthwhile Net Reward Rate from Using a Staking Service?

The average worthwhile reward rate for respondents planning to stake with a provider was 7.6%. This average is higher than those planning to be their own validator, suggesting increased performance may be required of third party providers.

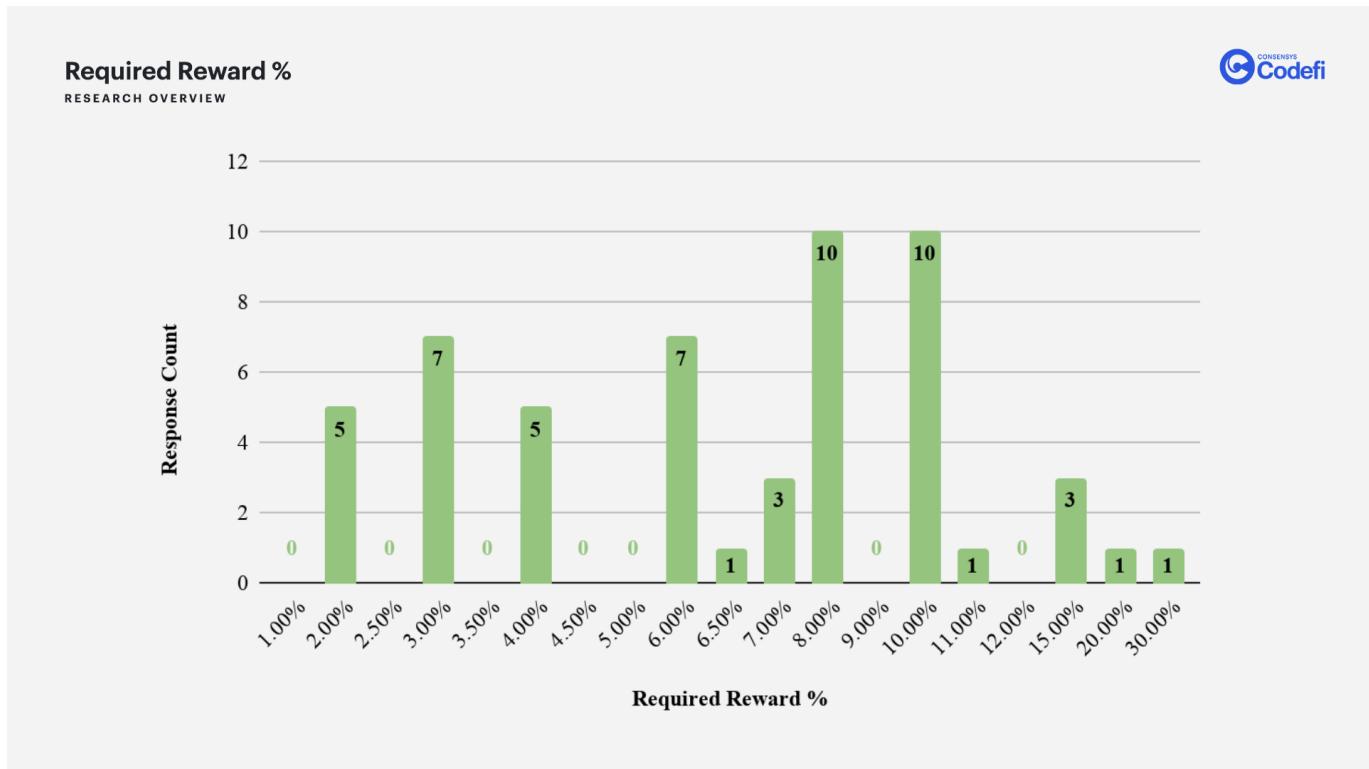
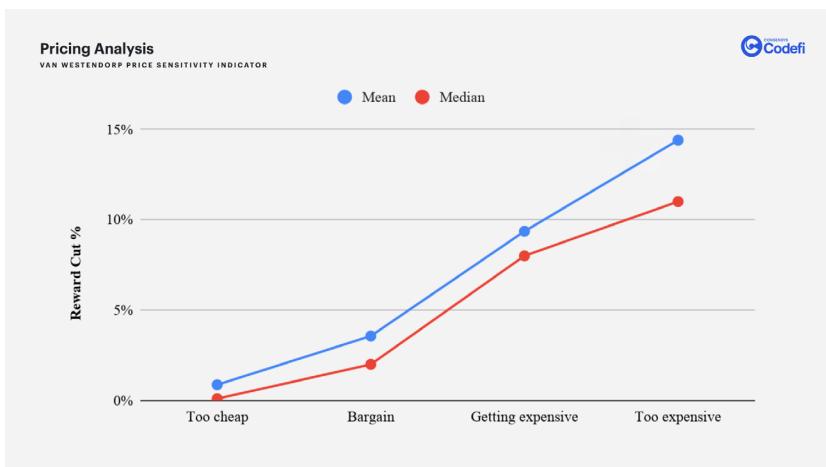


Figure 15: The worthwhile reward rate of respondents planning to use a third party staking provider.

## What is a Good Price for a Staking Service?



We used the Van Westendorp Price Sensitivity Indicator<sup>3</sup> to establish what ETH holders planning to stake with a third party provider might be willing to pay for a staking service. The sweet spot for pricing a staking service would be between 3.6–9.4% of earned rewards.

Figure 16: A trend curve of opinions towards staking service fees (as %) among those who plan to use a third party staking provider.

<sup>3</sup> Van Westendorp Price Sensitivity Meter method (<https://www.5circles.com/van-westendorp-pricing-the-price-sensitivity-meter/>)

## Respondents Who Are Undecided About Staking

Among the 14.6% of respondents who indicated that they are “undecided” about staking in Ethereum 2.0, we observed the following trends:

<b>UNDECIDED ABOUT STAKING</b>	<ul style="list-style-type: none"> <li>• Majority holds 32 ETH or more (62.2%).</li> <li>• Self-reported to have the lowest understanding of Eth2 economics.</li> <li>• Store the majority of their ETH on hardware wallets.</li> <li>• Indicated desire to wait and see as the primary reason for undecidedness.</li> <li>• Expect an average of 9.4% annualized rewards.</li> <li>• Care most about risk mitigation features including slashing protection, liquidity options and insurance.</li> </ul>
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The following questions were posed to respondents who indicated they are undecided about staking.

### Why Are You Undecided About Staking?

The primary reason why respondents were undecided about staking is that they want to wait and see if Ethereum 2.0 works before they put their ETH at risk. The inability to withdraw deposited ETH was respondents' second-most listed factor for being undecided.

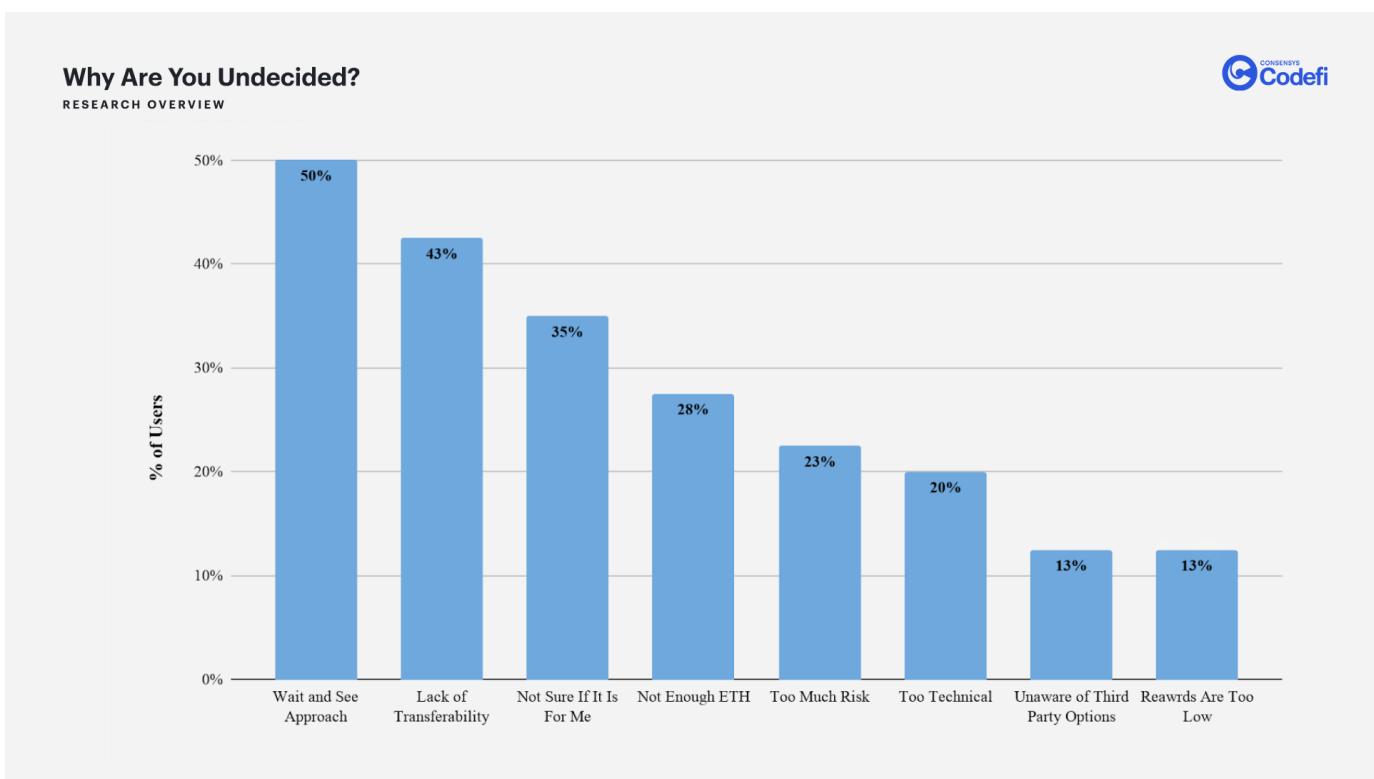


Figure 17: Reasons for uncertainty among respondents who are undecided about whether to stake ETH on Ethereum 2.0.

## What Percentage of ETH Rewards Would Make Staking Worth It?

Respondents who were undecided about staking indicated that staking would be worthwhile if it returned on average 9.4% rewards, which is 2.8% higher anticipated returns than those who intend to be their own validator.

### Required Reward %

RESEARCH OVERVIEW

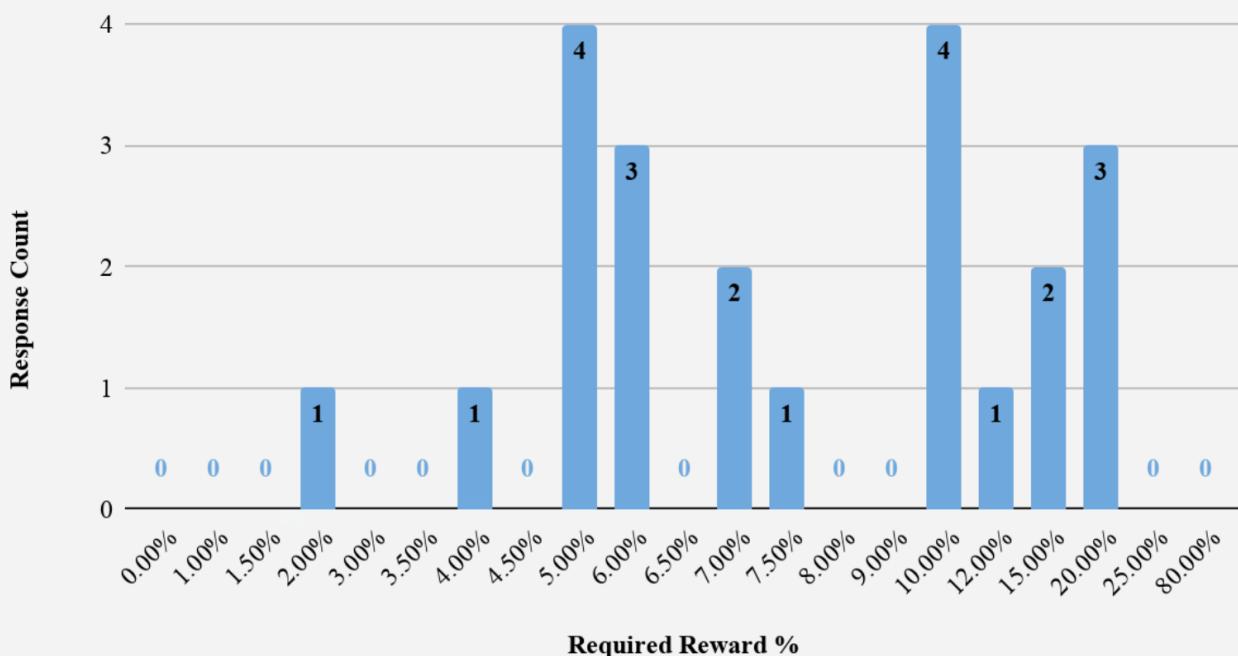


Figure 18: The % of ETH rewards that would make staking worthwhile among respondents who are undecided about whether to stake ETH on Ethereum 2.0.

## How Likely Are You to Stake With a Third Party Provider?

Just over 35% of respondents indicated that they are “likely” to use a third party provider if they decide to stake, while over half of the respondents were unsure.

### Likelihood of Using a Third Party

RESEARCH OVERVIEW

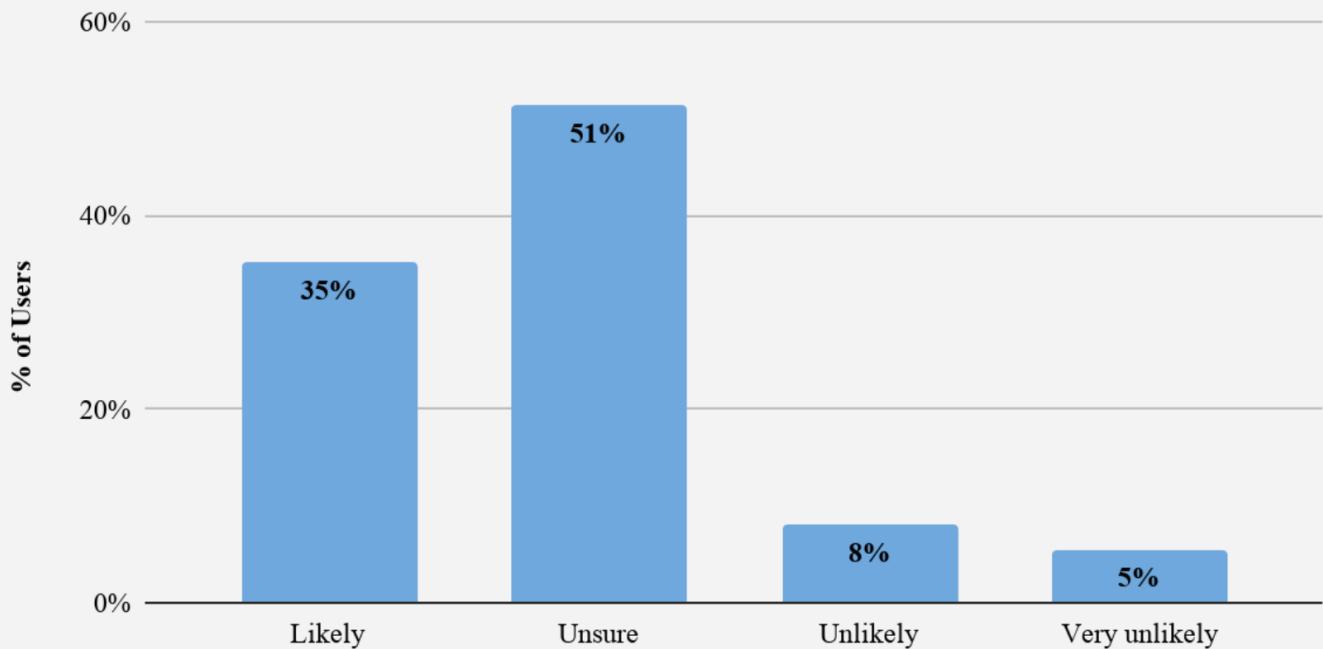


Figure 19: The likelihood of using a third party provider among respondents who are currently undecided about whether to stake ETH on Ethereum 2.0, should they eventually plan to stake.

## Which Management and Staking Provider Features Do You Care About Most?

Respondents indicated that non-custodial staking services and slashing protection was most important to them. Enhanced performance monitoring, ability to deposit any amount of ETH, and a record of rewards for tax reporting purposes were other commonly preferred features.

### Feature Favorites

**UNDECIDED**

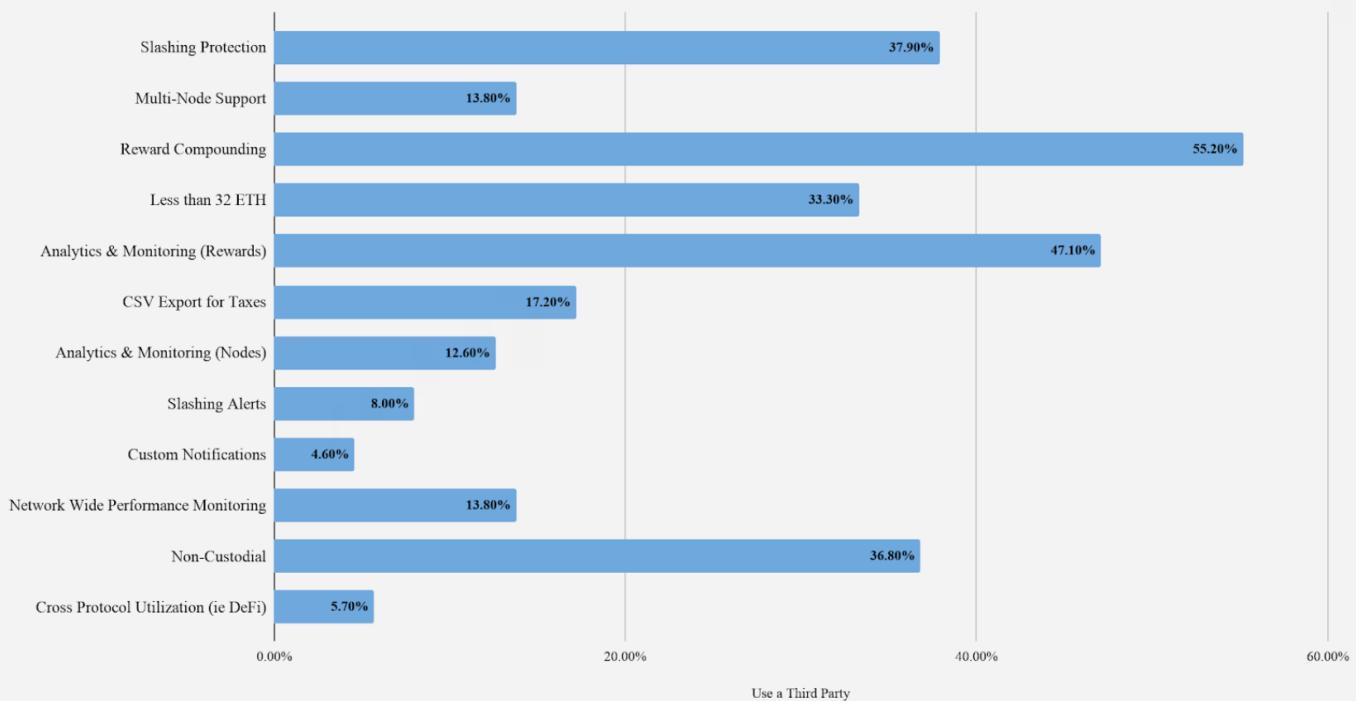


Figure 20: Node management and staking feature preferences among respondents who are currently undecided about whether to stake ETH on Ethereum 2.0, should they eventually plan to stake.

## Respondents Who Do Not Plan to Stake<sup>4</sup>

Among the 2.8% of respondents who indicated that they do not plan to stake, we observed the following commonalities:

DO NOT PLAN TO STAKE	<ul style="list-style-type: none"> <li><b>Majority holds less than 32 ETH (77.8%)</b></li> <li><b>Self reported to have the lowest understanding of Eth2 economics</b></li> <li><b>Store the majority of their ETH in non-custodial wallets (44.4%)</b></li> <li><b>Indicated insufficient ETH holdings as the primary reason for non-participation</b></li> </ul>
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The survey posed the following questions to these respondents who indicated they plan to use a third party provider.

### Why Do You Not Plan on Staking?

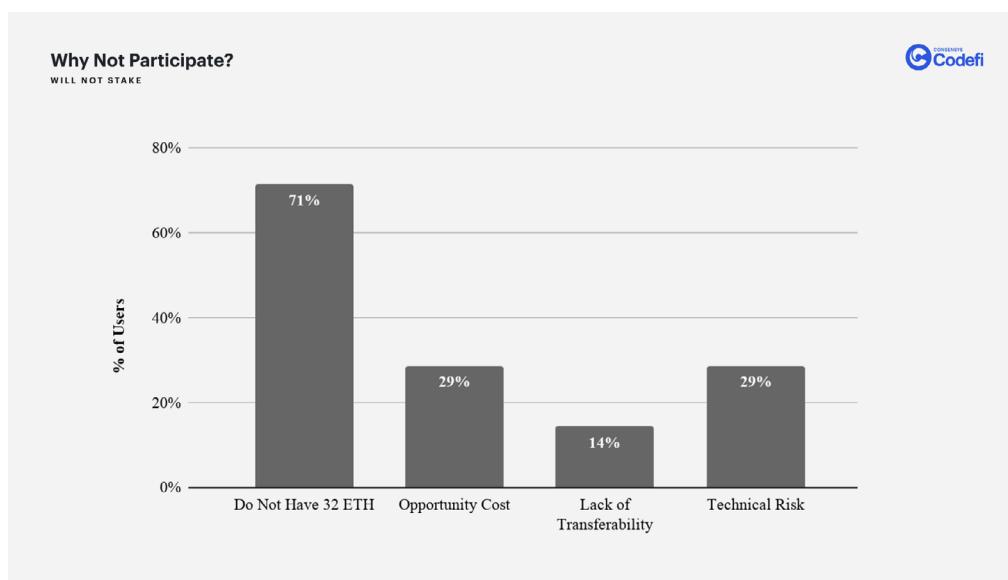


Figure 21: Reasons for not staking ETH on Ethereum 2.0 among respondents who do not plan to stake.

The majority of respondents, 71%, indicated that their primary reason for not staking ETH is that they have insufficient amounts of ether to participate. Similar to those who were undecided about staking, a large portion of respondents cited that they wanted to take a wait-and-see approach before they consider staking their own ETH.

<sup>4</sup> There is less confidence in these findings due to the limited number of responses that made up this data set. This segment should be used as an indicator only.

## How Likely Is It That You Will Use a Third Party Provider?

Respondents indicated that non-custodial staking services and slashing protection was most important to them. Enhanced performance monitoring, ability to deposit any amount of ETH, and a record of rewards for tax reporting purposes were other commonly preferred features.

### Likelihood of Using a Third Party

WILL NOT STAKE

CONSENSYS  
Codefi

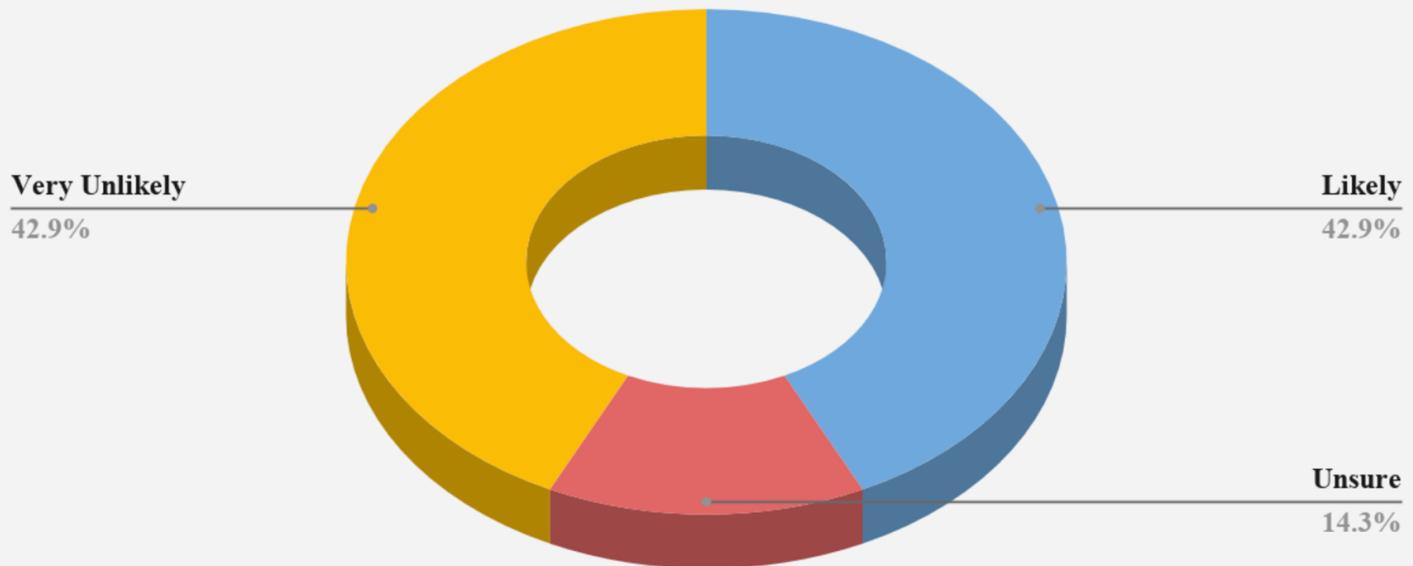


Figure 22: The likelihood of using a third party provider among respondents who do not stake.

## Third Party Staking Providers

With the introduction and implementation of Proof of Stake, the blockchain industry has seen a large wave of freshly created infrastructure form to facilitate staking on the behalf of others. As a result, all respondents were presented with questions about the use of third party staking providers.

### Preferred Features

While different segments of staking participants require different features of a staking service, slashing protection, performance monitoring tools, and the ability to compound staking rewards were commonly mentioned features across respondents. Offering non-custodial staking services was also one of the more important features listed by all respondents.

### Feature Requirements

RESEARCH OVERVIEW

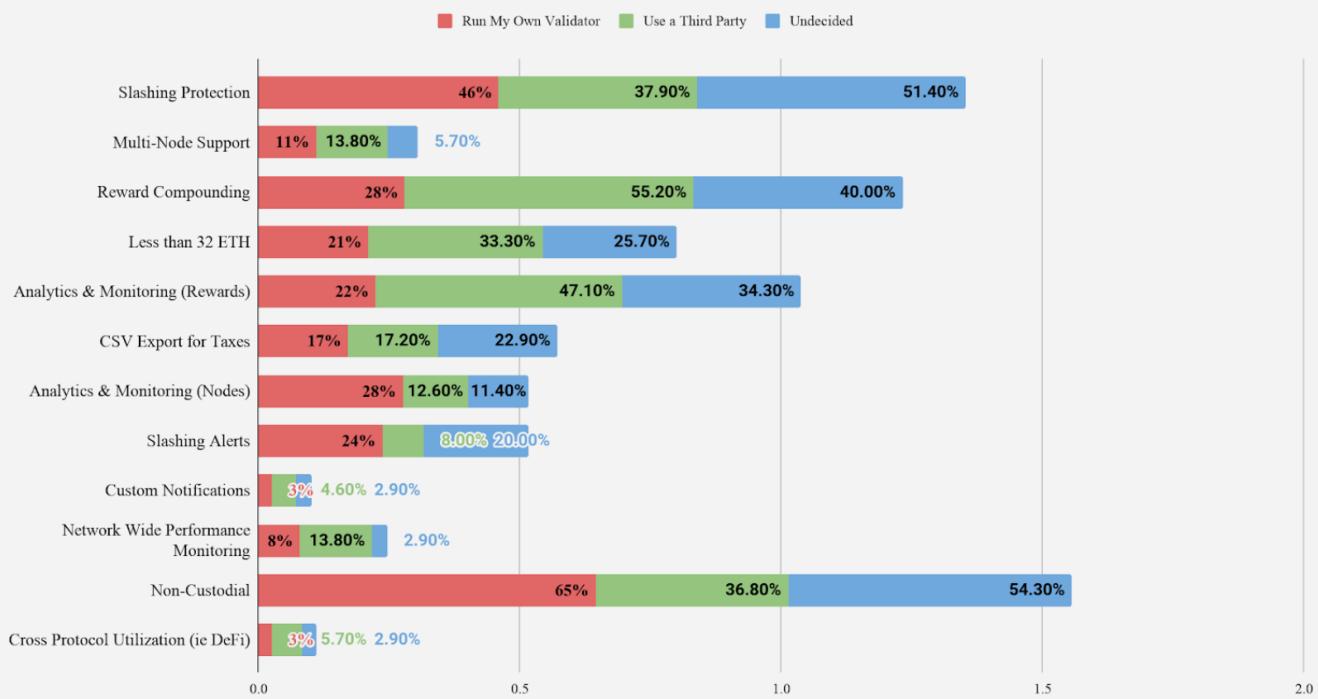


Figure 23: Preferred features of staking providers among respondents.

## Payment Preference

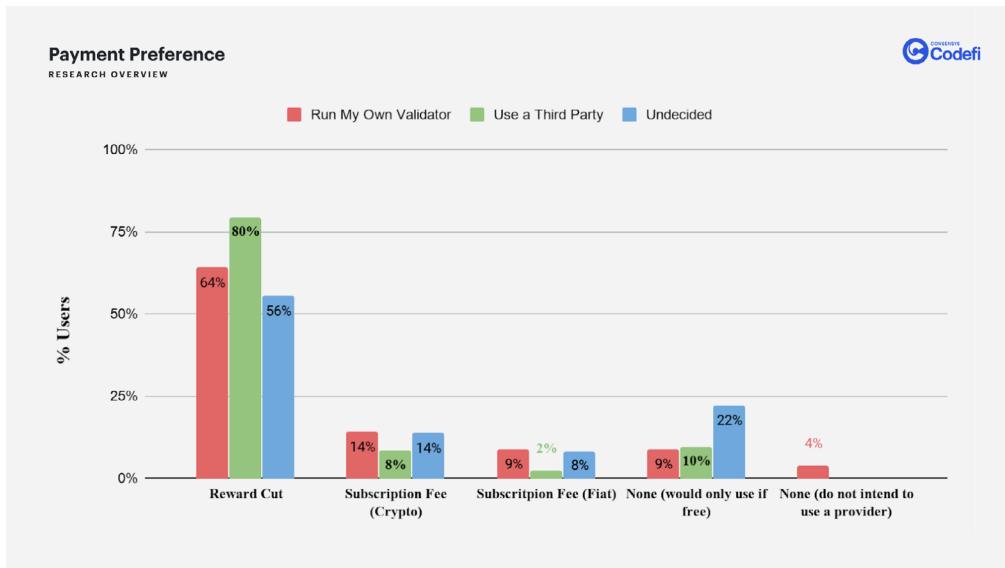


Figure 24: Respondents' preferred staking service fee model.

The majority of respondents would prefer a staking service fee model where deductions are taken from the rewards they earn. This is particularly true for those who plan to stake with a third party.

## Pricing

For respondents who intend to run their own validator node(s), the optimal range for pricing a staking service would be between 3.9–11.7% of their earned rewards. For people who intend to use a staking service, the range is slightly lower: between 3.6–9.4%. For people who are undecided, it's lower still: 2.8–7.2%.

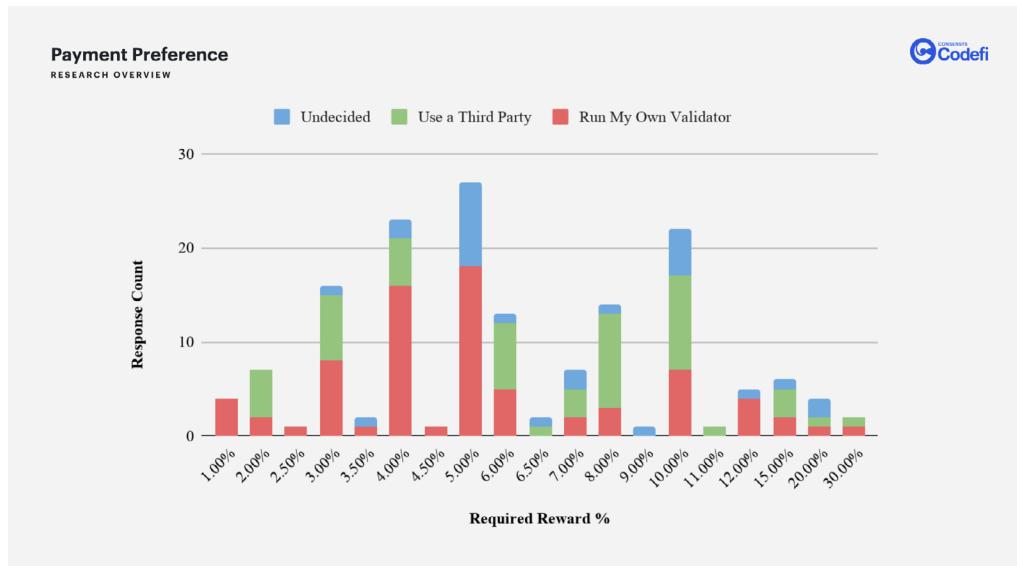


Figure 25: Respondents' required reward % when using a third party provider.

We used the Van Westendorp Price Sensitivity Indicator to establish what people might be willing to pay for a staking service. The optimal range for pricing, averaged across all segments, is between 3.59–9.84% of earned rewards.

**The optimal range for pricing, averaged across all segments, is between 3.59–9.84% of earned rewards.**

### Pricing Analysis (All Users)

VAN WESTENDORP PRICE SENSITIVITY INDICATOR

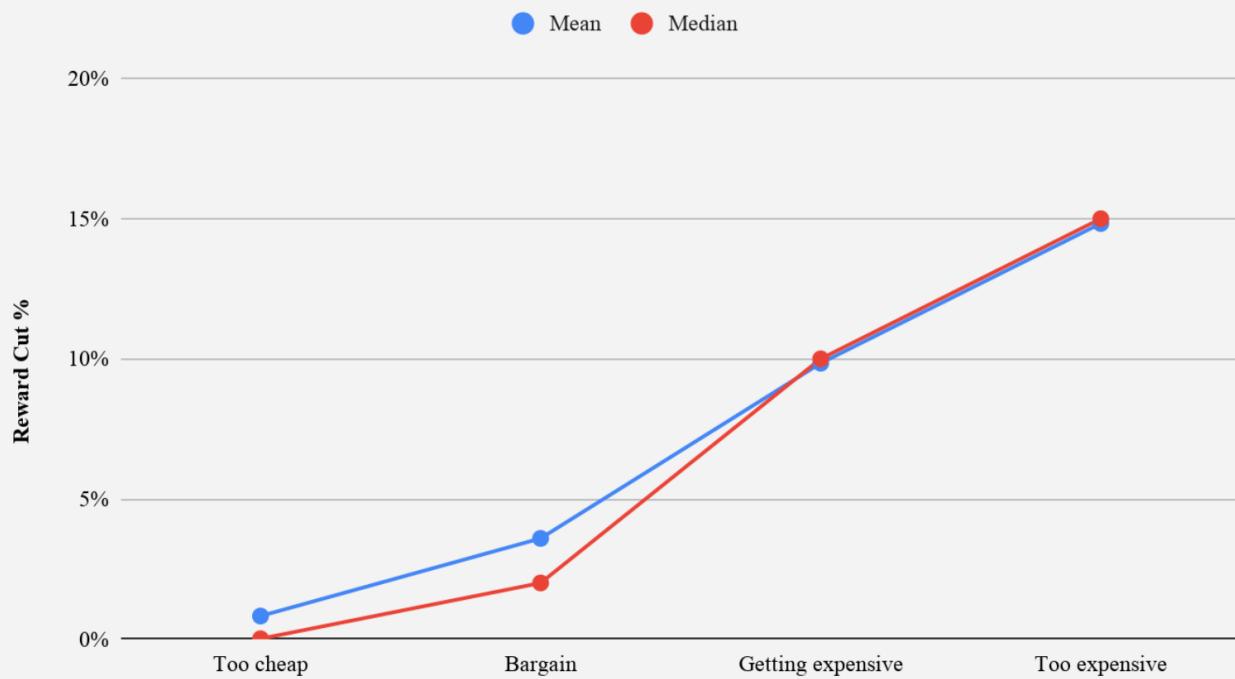


Figure 26: The % of their staking rewards that respondents are willing to pay for a staking service.

## Known Providers

Providers such as Coinbase, Binance, and Prysmatic Labs saw the highest reported awareness levels amongst respondents, with 90.2%, 87.1% and 73.6% of respondents indicating they knew of the providers. Other providers were less known among most respondents.

### Third Party Known Gauge

RESEARCH OVERVIEW



Third Party Providers

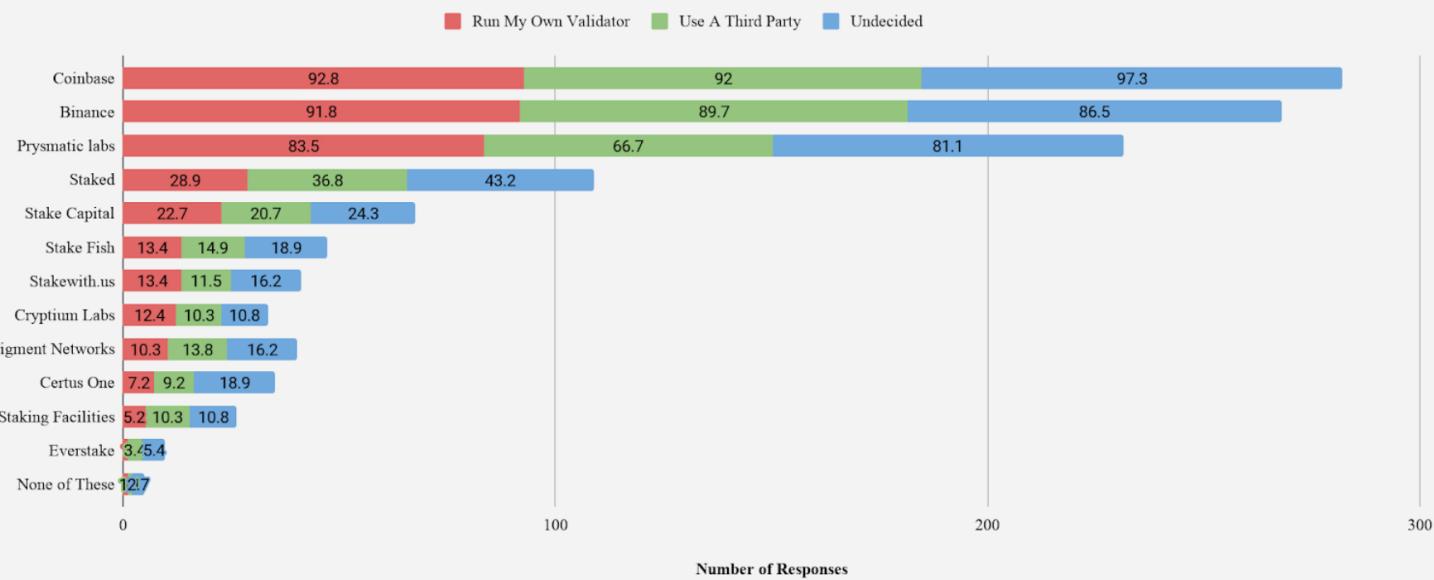


Figure 27: Recognized third party staking services among respondents.

## Trust

While providers such as Coinbase, Prysmatic Labs, and Binance saw the highest aggregate reported trust levels respectively, there was a 44.8% discrepancy between these providers and the associated trust respondents indicated on average, with Binance showing a divergence of 66.8% of respondents knowing but not trusting them. Trust in third parties is lower for people who intend to run their own node(s), with ~25% saying they would not trust any of the listed companies. For people who are undecided, their trust level is generally lower than those who already intend to use a staking service.

### Third Party Trust Gauge

RESEARCH OVERVIEW

Third Party Providers

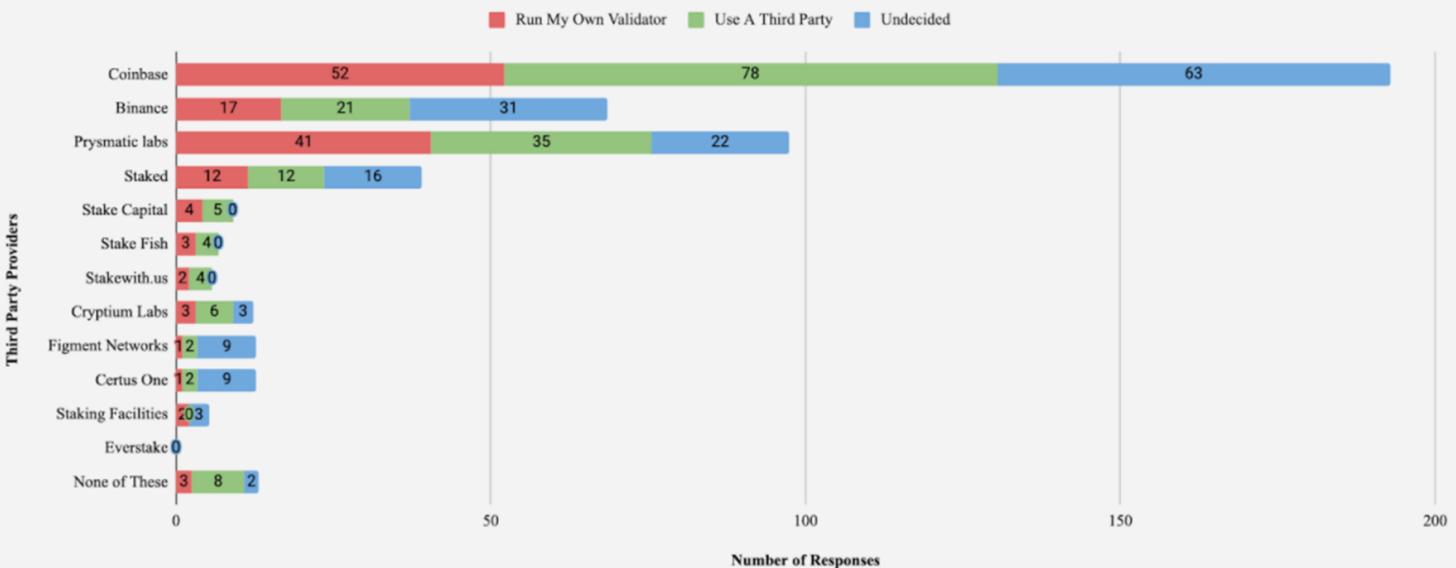


Figure 28: Extent to which respondents trust third party staking services.

# Discussion and Recommendations

In order to benefit the broader Ethereum 2.0 staking ecosystem, this study has sought to identify key themes that drive the decision-making process of participants who are considering staking ETH. Based on our findings, we have arrived at strategic and tactical recommendations for those who are building or otherwise seeking to increase the adoption of Eth2.

## Incentives

The incentives for direct or indirect participation in Eth2 staking are a critical aspect of the decision-making process for ETH holders, particularly when comparing the different participation approaches available to them.

Some users who intend to run their own validator(s) would do so altruistically, without any expected returns. On average, though, respondents expected an average of 5–10% returns for their efforts. On average, those who intend to run their own validator node(s) would require higher rewards from a staking service to convince them to use a third party instead of just running their own node(s).

Sound understanding of anticipated and projected rewards is paramount to drive better, more informed decision-making among existing ETH holders.

## Education

For any revolutionary technology, the learning curve for becoming an active participant in the Eth2 ecosystem is steep, due to its inherent systematic and economic complexity. Educating ETH holders

about the performance, security, and relevant incentive mechanisms is necessary to improve long-term adoption.

Fewer than 35% of all respondents indicated a sound knowledge of Eth2 staking rewards and economics. Those who are undecided or who do not intend to stake their ETH are the least knowledgeable about potential rewards.

Recognizing the importance of educating ETH holders about the economics and returns of Eth2 participation, ConsenSys has begun providing the ecosystem with tools including an [open-source calculator](#) and [educational resources](#) for helping ETH holders understand the fundamentals and benefits of staking.

Obligations of Eth2 stakers are not exclusively economic, but may require technical knowledge and awareness of operative responsibilities and risks—particularly for those planning on running their own validator node(s). Coherent, consistent, and concise documentation is therefore required to educate existing ETH holders on the process, available options, risks, and inherent responsibilities for staking their ETH.

## Trust

Trust and confidence in provided infrastructure is a core value proposition that protocol builders, client teams, and staking providers need to signal to existing ETH holders to drive better adoption and conversion for participation in Eth2 staking.

The majority of respondents who are either undecided or who initially do not intend to stake indicate they are taking a wait-and-see approach to ensure the protocol is functional and reliable before depositing their ETH. Publicizing code audits and testnet results is a critical step to promote confidence among current ETH holders.

Comparing respondents' indication of companies known to them to their associated trust levels reveals a trust gap among third party providers. Companies that are building Eth2 staking products and services should be dedicated to users' needs, offer transparency, and build products that make users feel confident. Examples of these referenced by respondents include the publication of relevant architecture, audits, servers, staff, and experience, as well as offering non-custodial services that allow stakers to remain in control of their deposits.

## Accessibility

The Eth2 protocol specifications require users to deposit a minimum of 32 ETH to become a validator. The majority of respondents who do not plan to stake on Eth2 indicated the primary reason for this is that they have insufficient amounts to run their own validator nodes.

For ETH holders with less than 32 ETH, pooling funds offers a pathway to participation. Raising awareness of potential options and trade-offs to stake less than 32 ETH through a third party provider such as Rocketpool or decentralized, trustless pools, which are currently in the research phase, is a potential pathway to participation for ETH holders of this category.

**"[Participating in Eth2 is] going to scare me to death, but I have to hope the EF will have done a better job than anyone else to formally vet the contracts."**

**“Something to help me understand that third-party staking is going to benefit the community as a whole and not cause a security problem.”**

## Security Considerations

The promise of earning staking rewards in exchange for active participation in the Eth2 protocol is an attractive one, however not all ETH holders necessarily have the desire or technical ability to operate validator node(s) themselves. The relatively high proportion of respondents who have indicated their interest in using a third party provider to stake on Eth2 reveals the existing demand, market opportunity, and anticipated role third party providers will play in driving broader retail and institutional Eth2 staking adoption.

Managed service and staking providers that provide staking infrastructure as a fundamental part of their business model and have established reputation and trust amongst users are well-positioned to offer their services to existing ETH holders. Moreover, exchanges and custodians with existing users accounts such as Binance and Coinbase are well positioned to extend existing business lines to offer

Eth2 staking on behalf of their clients, and may have sufficient economies and alternative revenue streams to be able to provide these at lower rates to compete for larger market shares.

While these stakeholders are uniquely positioned to drive adoption and staking participation rates, there are potential risks to the security-impeding centralization they would introduce. Considering that infrastructure providers typically operate the same infrastructure for multiple clients raises potential concerns over coordinated and/or simultaneous downtime.

## Value-added Features

Monitoring and analytical tools are critical features that improve operative and allocative efficiency among staking participants.

**“It needs to be so user friendly (...) if you want more people to use Ethereum, it needs better client software.”**

Desirable features can broadly be organized into two categories, which are detailed with relevant recommended feature sets below:

### **Monitoring and analytical tools for hardware and node functions:**

- Confirmation that my node is up and running and validating as expected.
- Monitoring of uptime, performance, and latency.
- Insight of relative performance within the network (stake effectiveness).
- Alerts if validator is reorganized, offline, or experiencing response time issues.

### **Monitoring of the network and portfolio rewards:**

- Monitoring of staker deposit, real-time, and historical reward accrual.
- Reporting of year to date earnings for accounting and taxation purposes.
- Overview of network performance, current, and historic stake rates.

In addition, offering tools to mitigate operational and potential exposure risks, such as slashing protection and deposit insurance, were commonly noted by respondents.

**“I Just want assurances. I want actual Nexus or Opyn insurance and the most confident assurances my ETH is safe.”**

**“I’m very concerned about the length of time eth 1 will be tied up, if there’s going to be a two-way bridge? Will there be a secondary market for people to be able to trade? It might be important to me, maybe I just feel agoraphobic of not having an escape. It’s not a go/no go decision for me but it’ll influence how many nodes I decide to run.”**

## Liquidity

The inability to withdraw deposited ETH for an undefined timeframe is a clear hurdle to users who would potentially participate in Phase 0, and influenced the amount of ETH they would initially stake. The inability to withdraw was the second most listed factor (43% of respondents) for those who were undecided about staking.

One way to catalyze retail and institutional participation in Ethereum 2.0 staking would be to create tradable staking derivatives on underlying staking positions that mitigate the perceived financial risk to participants. There are complex design considerations when evaluating the existing value divisibility, collateral-to-liquidity ratio, and inter-validator (risk) fungibility trilemma. Industry initiatives such as the [Liquid Staking Working Group](#) are beginning to assess possible implementation designs across other protocols.

While some industry stakeholders including ConsenSys are currently working on approaches to address this problem in an Eth2 context, a standardized solution and implementation design is recommended to address the value divisibility, collateral-to-liquidity ratio, and inter-validator (risk) fungibility trilemma holistically amongst participants.

# Conclusion

A few months ago when we began designing our research study, we realized that there was a communication gap between the builders and the enablers of the Eth2 community. A gap we felt well suited to fill. The tricky part was producing a data set that could inform both builders and enablers, while educating the end user. There are a lot of pressing questions to consider in the future of validator research and analysis, but we hope this serves as a foundation for other teams.

With Phase 0 on the horizon, client teams and product builders must design and implement features that encourage the broadest possible participation across the universe of future validators. The largest takeaways from this journey is the importance of anticipated and projected rewards to drive better, more informed decision-making abilities among existing ETH holders. In addition, coherent, consistent, and concise documentation is required to educate existing ETH holders on the process, available options, risks, and inherent responsibilities for staking their ETH.

We are excited to see how the validator landscape and options evolve once Eth2 launches. Today, the innovation we have witnessed in the space is remarkable. While Eth2 staking through centralized exchanges offers a lower barrier to entry and may offer better rewards than running infrastructure by oneself, does it increase centralization risk for the world's most used blockchain?

Eth2 will not build itself, so thank you to everyone participating in this milestone and we hope that you find our work insightful and helpful! We look forward to contributing to future analyses and fostering productive dialogue among the many stakeholders behind the exciting launch of Ethereum 2.0.

Visit [ConsenSys Codefi](#) for more information.

# Authors



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GLOBAL STRATEGY LEAD AT CONSENSYS CODEFI

Mara is a Strategy Manager at ConsenSys, where she leads global strategy, discovery, and delivery of new blockchain ventures, products, and platforms that facilitate the adoption and participation in open-source economies and decentralized finance. Her role entails supporting protocol teams with the launch, redesign, and ongoing participation in their respective networks by leveraging her background in applied economics and knowledge in market, mechanism, and game theoretic design.

Mara has broad experience in bringing blockchain-based products and ventures in the financial services, supply chain and retail sector to market. Prior to ConsenSys she worked as a Management Consultant at PwC, focused on developing the operative blueprints for the implementation of technological innovation in financial processes and evangelising the adoption of Ethereum in the German market.



## Georgia Rakusen

USER RESEARCH LEAD AT CONSENSYS CODEFI

Georgia is a seasoned user and design researcher, working to help ConsenSys products and blockchain organizations within the ecosystem understand their users and help them build genuinely useful and delightful experiences. At ConsenSys Georgia delivers high value strategic insights to our range of product teams building for developers, institutions, and general consumers, such as ConsenSys Codefi. In addition to running research for product teams globally, she also leads the ConsenSys research coaching program, and spends much of her time evangelizing for the voice of the customer in the web 3 space.

Georgia has an extremely broad background across a number of both scaled and start-up technology companies including Europe's leading usability testing company, and products in ecommerce, government services, finance, travel, publishing, gaming, and B2B.



## Collin Myers

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Collin leads a project in CodeFi called Activate, which is focused on launching decentralized networks and increasing participation. In addition to Collin's work on Activate, he is actively involved with the adoption, economics, and education of Eth2. Prior to ConsenSys Collin worked at MUFG, primarily focused on corporate debt in a variety of industry verticals.



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