Espresso / ESP Token

Coinbase Disclosure

The following disclosure is provided by the Espresso Foundation solely for informational and transparency purposes regarding Espresso and the ESP token. This information is not intended to be, and should not be construed as, financial advice, investment recommendation, or a solicitation to purchase or sell any securities or crypto-assets. The ESP token and Espresso's contributors will comply with applicable laws and regulations. Espresso's contributors will update the document regularly if new information becomes available.

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Project Information

About Espresso Network

Espresso is a high-performance base layer for rollups, making L2 transactions safe, fast, and seamless for users. Espresso is trusted by leading teams including Offchain Labs (Arbitrum), Polygon, Cartesi, RARI Chain, Rarible, Apechain, and Celo.

L2s and rollups that use Espresso as a decentralized base layer benefit from real-time speed in finalizing transactions. The confirmations that Espresso provides underpin cross-chain applications that can tap into liquidity and users from all connected Espresso chains.

Espresso is the first L1 to be purpose-built to support rollups, providing the scalable architecture, fast confirmations, and customizable infrastructure needed to support billions of users. While Ethereum gave rise to the rollup architecture, it was not initially designed for their needs — and this shows in its low throughput (and therefore high data availability costs for rollups) and its high latency (leading to slow cross-chain transactions).
Espresso is a decentralized proof-of-stake consensus network designed to deliver real-time transaction finality, orders of magnitude faster than the minutes or hours existing rollup architectures require to reach finality on the Ethereum L1. Espresso's custom BFT protocol (HotShot) is able to provide the confirmation speeds needed for seamless composability across chains while maintaining the security and decentralization that rollups require.

The Espresso team's mission since 2022 has been solving fragmentation within the Ethereum ecosystem. Fast finality is what enables real-time composability between rollups and other chains and applications, including supporting fast withdrawals to centralized applications like exchanges. Our stack-agnostic infrastructure integrates with any rollup or appchain, regardless of stack, VM, or even settlement layer.

Espresso's tech is based on an original R&D effort to create the fastest possible decentralized protocol for transaction confirmations. The team has invented, published, and developed a new open source consensus protocol, HotShot (a proof-of-stake variant of HotStuff), fast VID (verifiable information dispersal) for data availability, and integrations with the Arbitrum Nitro stack, OP Stack, and Cartesi rollup framework. Rollups and other chains can optionally leverage the Espresso Network for two other use cases beyond fast finality: as their source of low-cost data availability for resilience of their applications; and as a decentralized transaction sequencer system. Espresso currently supports 5+ MB/s throughput with transaction finality in seconds.

The Espresso Network, launched in production in November 2024, is currently in its Mainnet 0 release and has already confirmed over 10 million transactions. Integrated rollups include RARI Chain, ApeChain, Molten, LogX, and Appchain. More rollups are joining the Espresso



ecosystem every week, with teams like Celo and Superposition in the process of integrating and expected to go live in the coming days. Espresso has also co-developed a product for sequencing and finality with Offchain Labs and has plans to propose adoption of it for Arbitrum One to the Arbitrum DAO in early 2026. Mainnet 0 is a permissioned network run by a fixed set of 100 nodes operated by 22 institutional and community validators.

About Espresso Systems

Espresso Systems, the original inventors and developers of the Espresso technology, is a Delaware corporation founded in 2020. The Espresso team comprises a diverse and passionate group of contributors from around the world. We are developers, designers, and researchers who have contributed in academia, open-source communities, policymaking, and beyond. We have raised roughly $60 million from leading investors in technology and crypto, including a16z, Greylock Partners, Electric Capital, Sequoia Capital, and Polychain Capital.

The co-founders of Espresso Systems are Ben Fisch (CEO), Charles Lu (COO), Jill Gunter (Chief Strategy Officer), and Benedikt Bünz (Chief Scientist).

Ben Fisch

Co-founder, CEO, and CTO of Espresso Systems

Work experience:

- Espresso Systems – Co-Founder, CEO and CTO: 2020 – present
- Yale University – Assistant Professor: 2022 – present (on leave to focus on Espresso)
- Protocol Labs – former advisor
- Chia - former advisor

Educational background:

- PhD in Computer Science, Stanford University
- BS in Mathematics, University of Pennsylvania

Track record:

- Co-inventor of verifiable delay functions (VDFs, used in Ethereum and others), inventor of proof-of-replication (Filecoin), Basefold, Blaze, etc.

Profiles:

- LinkedIn: https://www.linkedin.com/in/ben-fisch-2b20055b
- X: https://x.com/benafisch/
- Personal: https://sites.google.com/site/benafisch/
- Academic: https://engineering.yale.edu/research-and-faculty/faculty-directory/ben-fisch

Charles Lu

Co-founder and COO of Espresso Systems



Work experience:

- Espresso Systems – Co-Founder and COO: 2020 – present
- Binance Labs – Research: 2018 – 2019
- Citadel – Quantitative Research Intern: 2018
- Facebook – Software Engineering Intern: 2017
- Amazon – Software Engineering Intern: 2015 – 2016

Educational background:

- PhD in Computer Science (on leave), Stanford University
- MS in Computer Science, Stanford University
- BS in Computer Science, Stanford University

Track record:

- Long-time open source contributor and investor; Co-Founder of the Stanford Blockchain Club in 2014

Profiles:

- LinkedIn: https://www.linkedin.com/in/charleslu1
- X: https://x.com/charleslu1

Jill Gunter

Co-founder and Chief Strategy Officer of Espresso Systems

Work experience:

- Espresso Systems – Co-Founder and Chief Strategy Officer: 2021 – present
- Slow Ventures – Principal and Venture Partner: 2019 – 2022
- Open Money Initiative – Co-Founder: 2018 – 2021
- Chain – Business Development & Strategy Lead: 2016 – 2017
- Goldman Sachs, Trading – 2012-2015

Educational background:

- MSc in Global Governance and Diplomacy, University of Oxford
- AB in Classics, Harvard University

Track record:

- Long-time blockchain industry thought leader; seed round investor in Solana

Profiles:

- LinkedIn: https://www.linkedin.com/in/jillrgunter/
- X: https://x.com/jiilrgunter

Benedikt Bünz

Co-founder and Chief Scientist of Espresso Systems



Work experience:

- Espresso Systems – Co-Founder and Chief Scientist: 2020 – present
- New York University – Assistant Professor: 2023 – present
- Visa – Research Intern: 2017
- BandwidthX – Simulation Engineer: 2013 – 2014

Educational background:

- PhD in Computer Science, Stanford University
- MS in Computer Science, Stanford University
- BS in Computer Science, University of Zurich

Track record:

- Co-inventor of Bulletproofs (used in Monero), Provisions (proof-of-solvency), VDFs (used in Ethereum and others), HyperPlonk, Zether, Flyclient

Profiles:

- LinkedIn: https://www.linkedin.com/in/buenz/
- X: https://x.com/benediktbuenz
- Academic: https://cs.nyu.edu/~bb/

Espresso Foundation

The Espresso Foundation was created and funded via a grant by Espresso Systems in early 2025. It is a Cayman foundation with an independent mandate of coordinating the ESP token launch, facilitating the upcoming upgrade of Espresso to decentralized proof-of-stake (PoS), and stewarding and decentralizing the Espresso Network.

Foundation decisions are overseen by a board of directors, which consists of:

- Glenn Kennedy (representing Leeward)
- Sarah Wheeler (representing Marfire)

The Espresso Foundation compensates Espresso Systems for certain development and technical services on an arm's-length basis.

Token Information

The ESP token will be the key mechanism by which the Espresso Network can run permissionlessly. ESP will be an ERC-20 token issued on the Ethereum mainnet; its contract address is 0x031de51f3e8016514bd0963d0b2ab825a591db9a.



ESP's initial total supply will be 3,590,000,000 ESP (3.59 billion). ESP has no fixed maximum supply due to staking reward dynamics.

The primary usages for ESP will be as follows:

- Proof-of-stake consensus. Validators will stake the token to participate in Espresso's HotShot consensus, and end users can delegate to validators to help strengthen security and earn a share of protocol rewards.
- Protocol fees. Data processing fees within Espresso will be paid in the ESP token.

Holders of the ESP token can use it to participate in operating HotShot proof-of-stake, either by operating a validator node, or by delegating tokens to another node operator. Node operators can set their preferred commission rate, earning a share of rewards associated with tokens that have been delegated by others to their node.

The Espresso Network stake table, which underlies HotShot consensus, is represented by an Ethereum contract at 0x36ad45A4931d0E226010BE9A8477D400C8bB3d9C. HotShot dynamically adjusts its active set of consensus nodes to match the top 100 validators by total stake.

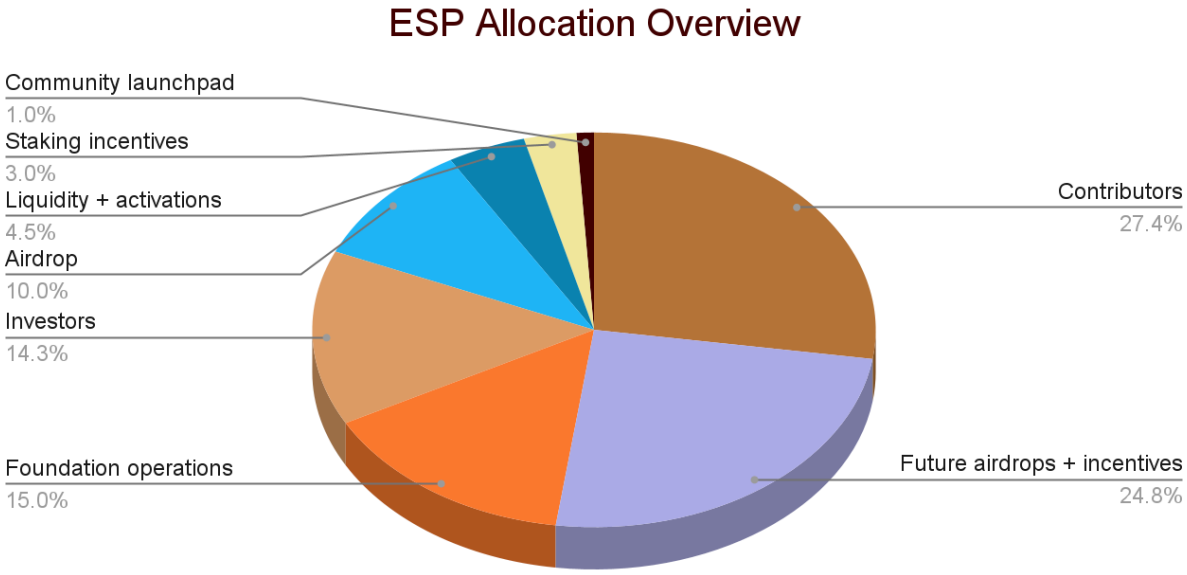
Espresso's staking reward formula is Ethereum-inspired, in which the reward rate on staked tokens is inversely proportional to the square root of the proportion of tokens currently staked (albeit with a slightly higher reward rate compared to Ethereum). The exact formula can be found in this tokenomics article.

This model has various advantages:

- There is an elastic incentive to stake when staking participation is low
- The reward rate gently tapers off as staking participation rises (in contrast to a reward rate that is inversely proportional to the proportion of tokens staked, i.e., fixed inflation schedule), so reward reductions are mild. This mitigates sudden drops in validator revenue.
- Meanwhile, the reward schedule still keeps inflation bounded.
- The math is predictable and follows a precedent set by Ethereum and other chains.

Token Distribution

The initial total supply of the ESP token will be allocated according to the following categories:



Allocation	Status at launch	% of initial supply
Contributors	Locked	27.36%
Investors	Locked	14.32%
Airdrop	Unlocked	10.00%
Community Launchpad	Locked	1.00%
Staking bonuses & network decentralization	Locked	3.01%
Future incentives	Locked	24.81%
Foundation operations	Locked	15.00%
Liquidity provision & activations	Unlocked	4.50%

Allocation Breakdowns

Contributors (27.36%):

- Approximately 27% of initial token supply has been allocated to contributors to Espresso technology since R&D began in 2020. This includes team members of the Espresso



Foundation and Translucence Research Inc, including employees, founders, contractors, and advisors.
- Contributor token allocations are subject to both lock-up and vesting conditions. Individual vesting schedules are typically 4-year linear with 1-year cliff, and are tied to the date of initial involvement in the project. All contributor tokens are locked for the first year following the launch of ESP. 25% of contributor tokens are unlocked at the 1-year anniversary of the launch, and ~2.08% monthly thereafter.
- Contributors and investors are not eligible for distributions from the airdrops or staking bonuses categories.
- Existing contributors may in the course of ordinary Foundation business receive future allocations from Foundation Operations and other categories. For example, the Foundation may choose to remunerate contributors out of this category for their future work on the Espresso technology suite.

Investors (14.32%):

- Reserved for investors in Espresso technology across the several Espresso Systems fundraising rounds since 2020.
- 4-year linear vesting with 1-year cliff: 0% unlocked at TGE; 25% unlocked 1 year after TGE; 1/48 unlocked per month thereafter.

Airdrop (10.00%):

- Retroactive rewards to Espresso and Espresso chains' and partners' broad user bases and community members.
- Airdrop eligibility and allocations are based on a comprehensive methodology, with over 40 distinct ways of qualifying for an airdrop allocation and over 1 million eligible addresses. Stay tuned for a long-form post detailing the airdrop methodology.
- Unclaimed tokens in this tranche will be reallocated towards future airdrops, grants, and incentive programs.
- Fully unlocked at TGE

Community launchpad (1.00%):

- Participants in Espresso's initial community launchpad via the Kaito Capital Launchpad in July 2025.
- 2-year linear vesting with 1-year cliff: 0% unlocked at TGE; 50% unlocked 1 year after TGE; 1/12 unlocked per month thereafter.

Staking bonuses and network decentralization (3.01%):
- Extra staking incentives distributed with the goal of broadly decentralizing the Espresso Network. These tokens will initially be deployed to airdrop participants who stake after claiming, with up to an 420% boost for those who stake for at least 2 years.



- Unused tokens in this tranche will be reallocated towards future airdrops, staking incentives, and other Foundation incentive and grant programs.
- While these tokens remain undistributed, the Espresso Foundation may delegate them to a wide array of node operators via the Foundation Delegation Program to decentralize and secure the Espresso Network.
- Locked at TGE, with a linear unlocking schedule spanning 2 years

Future airdrops, grants, and incentives (24.81%):

- Reserved for future community growth and ecosystem development initiatives as well as future contributors, with allocation decisions to be made by the Espresso Foundation.
- These tokens will support a wide range of programs, including additional community airdrops, developer and researcher grants, liquidity incentives, and ecosystem partnerships.
- Locked at TGE, with a linear unlocking schedule spanning 6 years

Foundation operations (15.00%):

- Reserved to fund the ongoing operations of the Espresso Foundation and its subsidiaries. This allocation will support the core responsibilities of the Espresso Foundation and its subsidiaries, including community engagement, evaluating and supporting ecosystem partnerships, and legal, administrative, and compliance functions.
- The Espresso Foundation will also use this reserve to fund (via its subsidiaries) grants administration, educational initiatives, and other programs that advance Espresso's mission and ensure the network's long-term sustainability.
- While these tokens remain undistributed, the Espresso Foundation will delegate them to a wide array of node operators via the Foundation Delegation Program to decentralize and secure the Espresso Network.
- The Foundation will provide quarterly summaries of the Foundation's distribution of tokens.
- Locked at TGE, with a linear unlocking schedule spanning 6 years

Liquidity provisioning and additional activations (4.50%):

- Reserved for liquidity provisioning to help ensure sufficient market depth and reliable access for participants across venues, and to foster stable price discovery at launch.
- This allocation may be used for a variety of strategies, including market maker loans (selected via a competitive process), decentralized exchange liquidity provisioning, exchange liquidity programs, pre-launch token offerings, and other mechanisms designed to promote smooth trading and reduce volatility.
- No more than 1.00% of the token supply will be paid to entities associated with centralized exchanges (e.g., listing fees, listing-related marketing initiatives, launchpools, etc.).

- Fully unlocked at TGE.

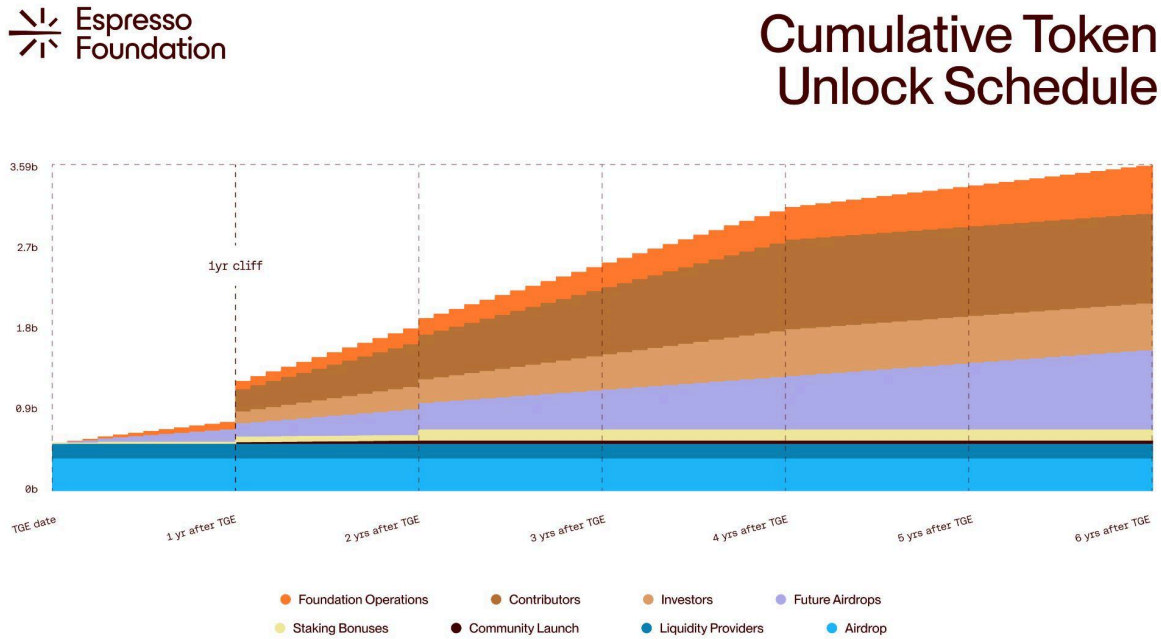
Prior Investments

Prior Espresso Systems funding rounds included a token warrant component, entitling investors to tokens subject to a 4-year unlock schedule with 1-year cliff:

- Espresso Systems Seed (2020): ~$3m raised from Polychain Capital and others
- Espresso Systems Series A (2021): ~$28m raised from Greylock Partners, Electric Capital, Sequoia Capital, Coinbase Ventures, Gemini, and others
- Espresso Systems Series B (2024): ~$28m raised from a16z crypto and strategic investors from ~40 ecosystem projects and partners of Espresso (https://medium.com/@espressosys/scaling-ethereum-without-compromise-5cdf035dd14b)

Token Unlock Schedule

The diagram below illustrates the ESP unlock schedule. Released tokens are those that are both unlocked and vested.



Unlocked Tokens:
At the launch of ESP, approximately 14.5% of initial supply will be unlocked. This includes allocations for Airdrop and Liquidity provision.



Locked Tokens:
Locked tokens (including those held by contributors and investors) cannot be staked. The on-chain addresses for locked supply are as follows:

Magna Airlock Merkle Vester vaults

- Contributors: https://etherscan.io/address/0x5de7ac8b6b390308fb7a1258b462ab8178e4897a
- Investors: https://etherscan.io/address/0x463e616ccb0e92284297039fdb1317d192acca2f
- Launchpad: https://etherscan.io/address/0x6136b406d912b9866f405dbb247ae98e1953531c

Espresso ServiceCo:
https://etherscan.io/token/0x031de51f3e8016514bd0963d0b2ab825a591db9a?a=0x5e37b8038615ef3d75cf28b5982c4cbf065401fb

This includes Foundation Operations, Staking Incentives, and Future Incentives. These will be delegated by foundation to ~20 independent node operators in the StakeTableV2 contract at 0x36ad45A4931d0E226010BE9A8477D400C8bB3d9C. This is necessary for the proof-of-stake consensus as contributors and investors cannot stake locked tokens.

Airdrop

Espresso has accumulated a substantive ecosystem of users (including chains, interoperability applications, and individual end users). The Espresso Foundation is involving all of these partners and groups in a widespread airdrop campaign with over 30 ways to qualify, with over 1 million addresses eligible. We view the airdrop also as an excellent educational and marketing opportunity, demonstrating Espresso's real product-market fit and traction.

Espresso has been working closely with its various partners to identify a broad set of top users of each partner chain/application. Allocations are set with the key principle that airdrop amounts should not be based on the user's wealth, but rather the user's level of engagement and activity over time. Espresso partners whose users will receive an airdrop allocation include:

- Across
- AltLayer
- ApeChain
- Arbitrum
- Automata



- Caldera
- Cartesi
- Celo
- Eco
- Huddle01
- Hyperlane
- LayerZero
- LogX
- Molten
- NodeOps
- Polygon
- Plume
- Rarible
- RARI Chain
- Rufus
- Superposition
- Syndicate
- T3rn

Espresso will also include its own community members in the airdrop, with a varied set of criteria including:

- Participants in Espresso's 2024 Mainnet Inscriptions campaign
- Composables NFT holders
- Build & Brew hackathon builders
- Espresso accelerator builders
- "Caffeinated Creators"
- Various POAP holders for Espresso online and in-person events over the past 3 years
- and more…

Token Sale Disclosure

Espresso TokenCo (BVI) Ltd, an indirect subsidiary of Espresso Foundation, conducted a community token sale on the Kaito Capital Launchpad in July 2025, in which 1% of the initial total supply of the ESP token was sold to purchasers in allowed jurisdictions for a total of approximately $4,000,000 in proceeds. Purchasers were allowed to subscribe for between $1,000 and $100,000 of allocation, with final allocations determined by Espresso Foundation. Allocations were awarded based on ecosystem commitment/thought leadership/reputation as well as other factors like time of bid/size of bid. Purchased tokens will be subject to transfer restrictions of 2 years, with a 1-year cliff (50% unlocked 1 year after token launch; the remainder unlocked monthly linearly).



All purchasers were subject to strict know-your-customer (KYC), which was facilitated by Kaito Capital Launchpad using Persona. Completion of SMS, identity document, and address verification was enforced for all participants.

The full list of excluded jurisdictions was:

- Afghanistan
- Belarus
- Bosnia and Herzegovina
- Burundi
- Central African Republic
- China
- Crimea
- Cuba
- Democratic People's Republic of Korea
- Democratic Republic of Congo
- Donetsk People's Republic
- Guinea
- Guinea-Bissau
- Iran
- Iraq
- Lebanon
- Libya
- Luhansk People's Republic
- Mali
- Myanmar
- Nicaragua
- North Korea
- Ontario, Canada
- Russia
- Somalia
- South Sudan
- Sudan
- Syria
- USA
- Venezuela
- Yemen
- Zimbabwe

Conflicts of Interest

No related-party transactions involving the token other than the token allocations described in this disclosure have occurred.

Market Makers

Espresso ServiceCo (BVI) Ltd., a direct subsidiary of Espresso Foundation, ran a competitive process with the aim of entering into agreements with three market makers to provide liquidity on trading venues. These arrangements aim to help ensure sufficient float, reliable access for participants across venues, and to foster stable price discovery at launch. The following market makers were chosen:

Contracted Market Maker	**Loan Size (in ESP)**	**Duration of Loan**
CyantArb	7,180,000	12 months
Da Vinci Trading	8,975,000	12 months
Anti Capital	N/A (working capital + retainer model)	N/A (working capital + retainer model)

Under the CyantArb and Da Vinci Trading arrangements, the contracted market makers may have the option to repay the loan partially or in full at maturity in USD rather than ESP, with strike prices determined based on average trading prices at specific intervals over the duration of the loan.

Additionally, Espresso ServiceCo (BVI) Ltd. may deploy up to 0.20% of the initial total ESP token supply to contracted market makers as an additional short-term loan with duration of 48 hours, with no repayment option.

Espresso ServiceCo (BVI) Ltd. may also deploy up to 0.20% of the initial total ESP token supply as initial liquidity in one or more decentralized exchange (DEX) pools. This would be a limited, short-term effort to help facilitate initial token accessibility and stability and is subject to the market risks inherent in decentralized finance, including potential impermanent loss.

Security

No hacks or material security breaches involving the Espresso Network or the ESP token have been reported to date.

To date, various audits have been conducted on core parts of the Espresso codebase by various firms including Common Prefix, Cantina (Spearbit), Informal Systems, and Runtime Verification. Additionally, several rigorous audits have been conducted internally. A regularly-updated repository containing all audit reports can be found on GitHub: https://github.com/EspressoSystems/espresso-audits.

The following table summarizes the findings and mitigations for each external audit as of early 2026:

Scope	Auditor	Findings and mitigations
Espresso Turbo-PLONK verifier and BN254	Common Prefix	High, medium, and low severity findings; all resolved and/or acknowledged
Espresso HotShot light client	Common Prefix	High, medium, and low severity findings; all resolved and/or acknowledged
EspTokenV2	Runtime Verification	Low severity finding resolved
Espresso Arbitrum Nitro integration	Cantina / Spearbit	High, medium, and low severity findings; all resolved and/or acknowledged
Espresso Merkle tree and BLS signature	Cantina / Spearbit	Medium and low severity findings; all resolved and/or acknowledged
Espresso HotShot epoch change protocol	Informal Systems	Critical finding resolved

The source code for all Espresso Network components (including the HotShot consensus protocol) and integration-related components is open source and can be found at Espresso Systems' GitHub: https://github.com/EspressoSystems.

Risks

Market, price, and liquidity risks

- High volatility and speculative markets. Crypto-assets, including ESP, can experience extreme price volatility due to speculation, macroeconomic conditions, market sentiment,



technical developments, security incidents, or regulatory actions. Holders may lose some or all of the value of their ESP.

- Liquidity may be limited. Even if ESP is listed on one or more venues, there may be insufficient liquidity, wide spreads, and slippage—especially around launch, major announcements, or unlock events—making it difficult to buy or sell ESP at desired prices or sizes.
- Risk of delisting or trading restrictions. Any exchange or trading venue may suspend trading, impose restrictions, or delist ESP for legal, regulatory, compliance, technical, or business reasons. Delisting or restrictions could materially reduce liquidity and accessibility.
- Exchange and intermediary risks. Centralized exchanges, market makers, custodians, wallets, and other intermediaries may suffer hacks, outages, insolvency, internal fraud, or operational failures that could lead to loss of access to ESP, impaired trading, or loss of funds. Espresso entities are not responsible for third-party platform performance or solvency.
- Market making/liquidity provisioning risks. Liquidity provisioning arrangements (including possible loan/option structures) may be used to facilitate orderly markets; these arrangements may not be effective, could be reduced/terminated, or could contribute to volatility. Liquidity provisioning can also involve counterparty and execution risks.

Regulatory, legal, and compliance risks

- Evolving regulation. Laws and regulations relating to crypto-assets, staking, token distributions, and interoperability infrastructure are evolving and differ by jurisdiction. Regulatory changes or differing interpretations of current laws and regulations by government authorities may occur, which could adversely affect ESP's availability, transferability, staking functionality, or the Espresso Network's operation.
- Classification and enforcement risk. Authorities may classify ESP or related activities differently than Espresso entities expect (including as a security, financial instrument, or otherwise regulated product), potentially leading to enforcement actions, penalties, limitations on trading/staking, or constraints on ecosystem activities.
- Airdrop and distribution compliance risk. Airdrops and claims processes may require "proof-of-humanity," KYC, and screening. Errors or disputes (e.g., eligibility determinations, false positives, geographic restrictions, sanctions screening) could result in delayed distributions, denied claims, user complaints, or regulatory scrutiny.
- Tax uncertainty. The tax treatment of acquiring, holding, staking, and disposing of ESP is uncertain in many jurisdictions and may change. Holders of ESP are responsible for determining their own tax obligations.

Token economics and supply risks



- No fixed maximum supply; inflation risk. ESP's supply is expected to increase over time due to staking rewards; this may dilute holders, affect price, and increase selling pressure.
- Unlock/vesting and selling pressure. While insiders (contributors and investors) are subject to transfer restrictions with a one-year cliff and multi-year release schedules, future unlocks may increase circulating supply and create downward price pressure, particularly around cliff dates and periodic unlocks.
- Fees and burn are not guaranteed at launch. Fees are expected to be set to 0 at launch, and a later upgrade is required to enable transaction fees and any associated burn or distribution mechanics. If fees are never enabled, are delayed, or differ from expectations, token utility and value propositions may be impacted.
- Token utility may evolve. ESP is intended to support staking/security at launch and may support fee payment later; changes to protocol design, economics, or implementation may alter token utility, demand, or incentive alignment. Espresso's contributors reserve the right to propose changes to token utility.

Network, protocol, and upgrade risks

- Mainnet upgrade risk (to permissionless PoS). Espresso Mainnet 0 has operated as a permissioned set of nodes, and the token launch is expected to coincide with a proof-of-stake upgrade. Major upgrades can introduce bugs, performance regressions, chain instability, or unexpected behaviors, including temporary downtime or degraded finality.
- Novel consensus and data availability components. Espresso uses HotShot consensus and related data availability mechanisms. Novel systems may contain undiscovered vulnerabilities that could affect safety, liveness, data availability, or finality guarantees.
- Smart contract risks (token, staking, and control systems). ESP is an ERC-20 on Ethereum mainnet, and staking is expected to be managed via Ethereum smart contracts (including upgradeable proxy patterns). Smart contracts may contain vulnerabilities or be integrated incorrectly. Even with audits and best practices, exploits could lead to loss of funds, incorrect accounting, or broken staking/withdrawal flows.
- Admin, multisig, and timelock risks. Certain system components (including upgrade processes) may be governed by multisig and timelock mechanisms. These controls reduce some risks but introduce others, including key management failures, signer compromise, operational errors, governance disputes, or delayed responses during incidents.
- Forks, client diversity, and validator coordination. Protocol upgrades generally require adoption by validators/node operators. Disagreements, software incompatibilities, or delayed adoption can lead to forks, network partitions, or inconsistent behavior across integrated rollups.



- Dependence on Ethereum and other external systems. Because ESP is issued on Ethereum mainnet and key staking/contract components are expected to be on Ethereum, it is possible that Ethereum congestion, fee spikes, reorgs, or other disruptions could affect staking, withdrawals, transfers, and user experience.

Interoperability and composability risks

- Cross-chain integration risk. Espresso is designed to provide rollups with fast confirmations and real-time visibility for cross-chain interactions. Failures in integrations, incorrect assumptions by applications, or bugs in bridging/messaging components (including third-party interoperability providers) could potentially lead to stuck transfers or incorrect cross-chain execution.
- Ecosystem dependency risk. Espresso's value proposition depends partly on its adoption by rollups, appchains, and interoperability partners. If integrations are delayed, discontinued, or fail to attract meaningful activity, demand for ESP and network usage may be lower than expected.
- Application-level misuse of fast confirmations. Developers may treat fast confirmations as equivalent to final settlement on another layer, or may build unsafe assumptions into cross-chain applications. Application errors or adversarial conditions could potentially still result in losses even if Espresso performs as designed.

Security risks

- Exploits, hacks, and unknown vulnerabilities. Any blockchain network and its software stack carries a risk of being attacked. Vulnerabilities in consensus, networking, cryptography, node implementations, or smart contracts could lead to chain halts, censorship, incorrect finality, data unavailability, or theft of assets.
- Validator concentration and economic attacks. Proof-of-stake systems may be vulnerable to stake concentration, validator collusion, censorship, liveness failures, or other economic/security attacks that can impair network performance or integrity.
- Key management and custody risk. Users are responsible for safeguarding private keys and wallet credentials. Loss or compromise of keys could result in permanent loss of ESP. Custodial providers may also fail or be compromised.
- Fraud, phishing, and counterfeit assets. Token launches are commonly targeted by scams (impersonation, fake airdrops, fake contract addresses, malicious links). Users may lose funds by interacting with fraudulent websites, wallets, or contracts.
- Emerging cryptographic threats. Advances in cryptanalysis or computing (including quantum computing) could weaken cryptographic assumptions used in wallets and blockchains, potentially affecting asset security over time.

Entity, governance, and operational risks

- Early-stage operational risk. The Espresso Foundation and affiliated entities are relatively new and may face operational challenges, including vendor management, internal controls, compliance costs, and staffing constraints.
- Limited control over decentralized outcomes. After the permissionless PoS upgrade, network evolution depends on node operators adopting software updates. The Espresso Foundation and Espresso Systems may propose changes and coordinate, but cannot unilaterally enforce outcomes in a decentralized setting.
- No inherent token governance rights. The ESP token is not intended to intrinsically grant governance rights; community influence may occur primarily through off-chain processes (discussion, social consensus, and client adoption by Espresso's decentralized validator network). This may be slower, less predictable, or disproportionately influenced by certain stakeholders. Such processes involve no fixed governance rules such as quorum requirements or approval threshold.
- Conflicts of interest and incentives. Espresso Systems and other parties may operate nodes and earn staking rewards, may provide paid services to ecosystem participants, and may influence prioritization of technical roadmaps. These activities could create perceived or actual conflicts with some token holders or ecosystem participants.
- Reliance on third-party providers. Token distribution, vesting enforcement, KYC, claims infrastructure, and custody may rely on third-party vendors. Vendor failures, security incidents, or regulatory actions affecting vendors could potentially disrupt distributions, claims, or ongoing operations.

Competitive and roadmap risks

- Competitive landscape. Espresso competes for adoption with alternative approaches across the rollup stack (e.g., other data availability layers, shared sequencers, interoperability and finality solutions, and L1/L2 roadmaps). Competitors may achieve superior traction, performance, integrations, or incentives.
- Ethereum and rollup roadmap shifts. If Ethereum or major rollup ecosystems materially improve native finality, composability, or interoperability in ways that reduce the need for Espresso's functionality, Espresso's adoption and token demand could be adversely affected.
- Execution and delivery risk. Planned milestones (e.g., enabling fees, improving throughput/latency, expanding integrations, or deploying decentralized sequencing options) may be delayed, changed, or not delivered, which could affect expected utility and ecosystem growth.