CRYPTO RISK METRICS
DON'T TRUST. VERIFY.

White paper drafted under the European Markets in Crypto-Assets Regulation (EU) 2023/1114 for FFG S6702SWRZ

Preamble

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01. Date of notification

This white paper was notified on 2026-06-10.

02. Statement in accordance with Article 6(3) of Regulation (EU) 2023/1114

This crypto-asset white paper has not been approved by any competent authority in any Member State of the European Union. The person seeking admission to trading of the crypto-asset is solely responsible for the content of this crypto-asset white paper.

03. Compliance statement in accordance with Article 6(6) of Regulation (EU) 2023/1114

This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 of the European Parliament and of the Council and, to the best of the knowledge of the management body, the information presented in the crypto-asset white paper is fair, clear and not misleading and the crypto-asset white paper makes no omission likely to affect its import.

04. Statement in accordance with Article 6(5), points (a), (b), (c), of Regulation (EU) 2023/1114

The crypto-asset referred to in this crypto-asset white paper may lose its value in part or in full, may not always be transferable and may not be liquid.

05. Statement in accordance with Article 6(5), point (d), of Regulation (EU) 2023/1114

As defined in Article 3(9) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets – amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 – a utility token is “a type of crypto-asset that is only intended to provide access to a good or a service supplied by its issuer”. This crypto-asset does not qualify as a utility token, as its intended use goes beyond providing access to a good or service supplied solely by the issuer.

06. Statement in accordance with Article 6(5), points (e) and (f), of Regulation (EU) 2023/1114

The crypto-asset referred to in this white paper is not covered by the investor compensation schemes under Directive 97/9/EC of the European Parliament and of the Council or the deposit guarantee schemes under Directive 2014/49/EU of the European Parliament and of the Council.

Summary

07. Warning in accordance with Article 6(7), second subparagraph, of Regulation (EU) 2023/1114

Warning: This summary should be read as an introduction to the crypto-asset white paper. The prospective holder should base any decision to purchase this crypto-asset on the content of the crypto-asset white paper as a whole and not on the summary alone. The offer to the public of this crypto-asset does not constitute an offer or solicitation to purchase financial instruments and any such offer or solicitation can be made only by means of a prospectus or other offer documents pursuant to the applicable national law. This crypto-asset white paper does not constitute a prospectus as referred to in Regulation (EU) 2017/1129 of the European Parliament and of the Council or any other offer document pursuant to Union or national law.

08. Characteristics of the crypto-asset

The FIL crypto-asset referred to in this white paper is a crypto-asset other than EMTs and ARTs. It is natively implemented on the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15, according to the DTI FFG shown in section F.14, as of 2026-06-05. The maximum supply of FIL is 2,000,000,000 tokens. The first activity on Filecoin can be viewed on 2020-08-24 (genesis block hash: bafy2bzacecnamqgqmifpluoeldx7zzglxcljo6oja4vrmtj7432rphldpdmm2, source: https://beryx.io/fil/mainnet/tipset/0, accessed 2026-06-05). The first activity on Binance Smart Chain can be viewed on 2020-10-13 (transaction hash: 0x0324d6c26a776cdca0f84e253a0892d0e7688d08be6471bdc3204681ad50abc2, source: https://bscscan.com/tx/0x0324d6c26a776cdca0f84e253a0892d0e7688d08be6471bdc3204681ad50abc2, accessed 2026-06-05). The first activity on the Huobi ECO Chain network can no longer be retrieved, as the network ceased operations on 2025-01-15.

Filecoin is a decentralised peer-to-peer storage network designed to facilitate the storage and retrieval of digital data through a distributed marketplace. The network serves as an incentive layer for the InterPlanetary File System (IPFS) by providing economic mechanisms and cryptographic verification for long-term data storage. Filecoin operates through a blockchain-based architecture that uses Expected Consensus, under which block production is linked to storage power contributed by storage providers. The network uses Proof-of-Replication and Proof-of-Spacetime to verify that data has been stored and maintained for agreed periods. The blockchain is organised as a chain of tipsets, consisting of groups of valid blocks produced during the same epoch. The network also supports programmable functionality through the Filecoin Virtual Machine (FVM), which enables smart contracts known as actors, including Ethereum-compatible applications through the Filecoin Ethereum Virtual Machine (FEVM).

FIL is the native crypto-asset of the Filecoin network and is used to pay for storage, retrieval, and transaction processing services. FIL is required to pay network gas fees and may be earned by storage providers through block rewards and transaction processing. The crypto-asset is also used as pledge collateral by storage providers participating in the network. Failure to provide required cryptographic proofs or maintain stored data may result in the slashing of pledged FIL in accordance with the network protocol. FIL holders may participate in governance processes relating to network upgrades and protocol changes.

The crypto-asset does not grant any legally enforceable or contractual rights or obligations to its holders or purchasers. Any functionalities accessible through the underlying technology are purely technical or operational in nature and do not confer rights comparable to ownership, profit participation, governance, or similar entitlements known from traditional financial instruments.

09. Information about the quality and quantity of goods or services to which the utility tokens give access and restrictions on the transferability

As defined in Article 3(9) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets – amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 – a utility token is “a type of crypto-asset that is only intended to provide access to a good or a service supplied by its issuer”. This crypto-asset does not qualify as a utility token, as its intended use goes beyond providing access to a good or a service supplied solely by the issuer.

10. Key information about the offer to the public or admission to trading

Crypto Risk Metrics GmbH is seeking admission to trading on the Payward Global Solutions LTD ("Kraken") platform in the European Union in accordance with Article 5 of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937. The admission to trading is not accompanied by a public offer of the crypto-asset.

Part A – Information about the offeror or the person seeking admission to trading

A.1 Name

Crypto Risk Metrics GmbH is the person seeking admission to trading.

A.2 Legal form

The legal form of Crypto Risk Metrics GmbH is 2HBR, which corresponds to "Gesellschaft mit beschränkter Haftung".

A.3 Registered address

The registered address of Crypto Risk Metrics GmbH is Lange Reihe 73, 20099 Hamburg,

Germany,

DE-HH

A.4 Head office

The head office is identical to the registered address.

A.5 Registration date

Crypto Risk Metrics GmbH was registered on 2018-12-03.

A.6 Legal entity identifier

The Legal Entity Identifier (LEI) of Crypto Risk Metrics GmbH is 39120077M9TG0O1FE242.

A.7 Another identifier required pursuant to applicable national law

The national identifier of Crypto Risk Metrics GmbH is HRB 154488.

A.8 Contact telephone number

+4915144974120

A.9 E-mail address

info@crypto-risk-metrics.com

A.10 Response time (Days)

Crypto Risk Metrics GmbH will respond to investor enquiries within 30 calendar days.

A.11 Parent company

Crypto Risk Metrics GmbH has no parent company.

A.12 Members of the management body

Identity	Function	Business Address
Tim Zölitz	Chairman	Lange Reihe 73, 20099 Hamburg, Germany

A.13 Business activity

Crypto Risk Metrics GmbH is a technical service provider that supports regulated entities in fulfilling their regulatory requirements. Among other services, Crypto Risk Metrics GmbH acts as a data provider for ESG data under Article 66(5). In light of the requirements set out in Articles 4(7), 5(4) and 66(3) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937, Crypto Risk Metrics GmbH aims to provide central services for crypto-asset white papers.

A.14 Parent company business activity

Crypto Risk Metrics GmbH does not have a parent company. Accordingly, no business activity of a parent company is to be reported in this section.

A.15 Newly established

Crypto Risk Metrics GmbH has been established since 2018-12-03 and is therefore not newly established (i.e. more than three years).

A.16 Financial condition for the past three years

Crypto Risk Metrics GmbH, founded in 2018 and based in Hamburg (HRB 154488), has undergone several strategic shifts in its business focus since incorporation. Due to these changes in business model and operational direction over time, the financial figures from earlier years are only comparable to a limited extent with the company's current commercial activities. The present business model – centred on regulatory technology and risk analytics in the context of the MiCA framework – has been developed progressively and can realistically be considered fully operational since approximately 2024.

The company's financial trajectory over the past three years reflects the transition from exploratory development towards market-ready product delivery. Profit or loss after tax for the last three financial years is as follows:

2024 (unaudited): loss of EUR 50,891.81

2023 (unaudited): loss of EUR 27,665.32

2022: profit of EUR 104,283.00

The profit in 2022 resulted primarily from legacy consulting activities, which were discontinued as part of the company's repositioning.

The losses in 2023 and 2024 resulted from strategic investments in the development of proprietary software infrastructure, regulatory frameworks, and compliance technology for the MiCA ecosystem. During those periods, no substantial commercial revenues were expected, as resources were directed towards preparing the platform for market entry in a regulated environment.

A fundamental repositioning of the company occurred in 2023 and especially in 2024, when the focus shifted towards providing risk management, regulatory reporting, and supervisory compliance solutions for financial institutions and crypto-asset service providers. This marked a material shift in business operations and monetisation strategy.

Based on preliminary unaudited management information for the financial year 2025, revenues are expected to have exceeded EUR 800,000, while preliminary net profit is expected to exceed EUR 100,000.

These figures are not audited and are not based on a finalised annual financial statement. Accordingly, they remain subject to finalisation and may differ from the figures ultimately reported in the annual financial statements.

With the regulatory environment now taking shape and the platform commercially validated, it is assumed that the effects of the strategic developments will continue to materialise in 2026. The company foresees further scalability of its technology and growing market demand for regulatory compliance tools in the European crypto-asset sector.

No public subsidies or governmental grants have been received to date; all operations have been financed through shareholder contributions and internally generated resources. Crypto Risk Metrics has never accepted any payments in tokens from projects it has worked with and – due to its internal Conflicts of Interest Policy – never will.

A.17 Financial condition since registration

Not applicable. The company has been established for more than three years and its financial condition over the past three years is provided in Part A.16 above.

Part B – Information about the issuer, if different from the offeror or person seeking admission to trading

B.1 Issuer different from offeror or person seeking admission to trading

Yes, the issuer is different from the person seeking admission to trading.

B.2 Name

Protocol Labs, Inc.

B.3 Legal form

The legal form of Protocol Labs, Inc. is XTIQ, which corresponds to "Corporation".

B.4 Registered address

The registered address of Protocol Labs, Inc. is c/o Vcorp Services, LLC, 108 W. 13th Street, Suite 100, Wilmington, DE 19801,

United States,

US-DE

B.5 Head office

Not applicable.

B.6 Registration date

Protocol Labs, Inc. was registered on 2014-05-09.

B.7 Legal entity identifier

The Legal Entity Identifier (LEI) of Protocol Labs, Inc. is 254900S42IO04VDRST31.

B.8 Another identifier required pursuant to applicable national law

Not applicable.

B.9 Parent company

Not applicable.

B.10 Members of the management body

Identity	Function	Business Address
Juan Batiz-Benet	CEO	2810 N Church Street, #51207, Wilmington, DE 19802, United States
Chris Brocoum	CFO	2810 N Church Street, #51207, Wilmington, DE 19802, United States

B.11 Business activity

Protocol Labs, Inc. is a research and development organisation focused on the creation of open-source internet infrastructure technologies, including decentralised networking, storage and computing systems.

B.12 Parent company business activity

Not applicable.

Part C – Information about the operator of the trading platform in cases where it draws up the crypto-asset white paper and information about other persons drawing the crypto-asset white paper pursuant to Article 6(1), second subparagraph, of Regulation (EU) 2023/1114

C.1 Name

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.2 Legal form

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.3 Registered address

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.4 Head office

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.5 Registration date

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.6 Legal entity identifier

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.7 Another identifier required pursuant to applicable national law

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.8 Parent company

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.9 Reason for crypto-asset white paper preparation

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.10 Members of the management body

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.11 Operator business activity

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.12 Parent company business activity

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.13 Other persons drawing up the crypto-asset white paper according to Article 6(1), second subparagraph, of Regulation (EU) 2023/1114

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

C.14 Reason for drawing the white paper by persons referred to in Article 6(1), second subparagraph, of Regulation (EU) 2023/1114

Not applicable since Crypto Risk Metrics GmbH is not a trading platform.

Part D – Information about the crypto-asset project

D.1 Crypto-asset project name

Long Name: "Filecoin", Short Name: "FIL" according to the Digital Token Identifier Foundation (www.dtif.org, DTI see F.13, FFG DTI see F.14 as of 2026-06-04).

D.2 Crypto-assets name

Long Name: "Filecoin" according to the Digital Token Identifier Foundation (www.dtif.org, DTI see F. 13, FFG DTI see F.14 as of 2026-06-04).

D.3 Abbreviation

Short Name: "FIL" according to the Digital Token Identifier Foundation (www.dtif.org, DTI see F.13, FFG DTI see F.14 as of 2026-06-04).

D.4 Crypto-asset project description

According to publicly available information (source: https://docs.filecoin.io/, accessed 2026-06-05), the Filecoin ecosystem is a crypto-asset initiative concerned with the development and operation of a decentralised data-storage infrastructure implemented as an independent (Layer-1) distributed-ledger network. The project is designed to facilitate the storage, retrieval, and preservation of digital information through a peer-to-peer marketplace in which independent participants provide storage capacity to network users. Filecoin operates as a public blockchain and serves as an incentive layer for the InterPlanetary File System (IPFS), providing economic mechanisms and cryptographic verification processes intended to support long-term data persistence and accessibility. Within this framework, Filecoin functions as a coordination and execution environment for decentralised storage activities, allowing participants to store, retrieve, and verify data through protocol-defined processes without reliance on a centralised storage operator. The operation of the network depends on the continued availability and performance of its underlying software components, storage providers, and supporting infrastructure.

The Filecoin network utilises the Expected Consensus protocol, under which block producers are selected probabilistically based on verifiable storage resources contributed to the network. To support the integrity of stored data, the protocol incorporates specialised cryptographic verification mechanisms, including Proof-of-Replication and Proof-of-Spacetime, which are designed to demonstrate that storage providers maintain unique copies of data and continue to store such data over time. The network further supports programmable functionality through the Filecoin Virtual Machine (FVM), enabling the deployment of protocol-defined and user-created applications. Certain features, including consensus parameters, storage-market configurations, virtual-machine functionality, interoperability mechanisms, and scalability solutions, depend on governance decisions, protocol upgrades, and technical implementation and may be modified over time.

The FIL crypto-asset functions as the native network-participation and coordination instrument within the Filecoin ecosystem. The project does not involve the granting of ownership, profit-participation rights, or legal claims against the project entity or its contributors. Instead, it centres on the creation of a technical environment in which the FIL crypto-asset may serve as a governance and network-participation input for certain protocol processes. The long-term evolution of the Filecoin system, including the scope of available features, the decentralisation roadmap, storage-provider and block-production mechanisms, and the operational continuity of the infrastructure, may vary based on technical, economic, and regulatory considerations. All future developments remain subject to change.

D.5 Details of all natural or legal persons involved in the implementation of the crypto-asset project

Name of person	Type of person	Business address of person	Domicile of company
Protocol Labs, Inc.	Other person involved in implementation	108 W. 13th Street, Suite 100, Wilmington, DE 19801, United States	United States
Filecoin Foundation	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Marta Belcher	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Joe Landon	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Kristin Smith	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Philip Rosedale	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Sheila Warren	Other person involved in implementation	600 N Broad St Suite # 5-3341, Middletown, DE 19709, United States	United States
Juan Batiz-Benet	Other person involved in implementation	2810 N Church Street, #51207, Wilmington, DE 19802, United States	United States
Chris Brocoum	Other person involved in implementation	2810 N Church Street, #51207, Wilmington, DE 19802, United States	United States

D.6 Utility Token Classification

As defined in Article 3(9) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets – amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 – a utility token is "a type of crypto-asset that is only intended to provide access to a good or a service supplied by its issuer". This crypto-asset does not qualify as a utility token, as its intended use goes beyond providing access to a good or a service supplied solely by the issuer.

D.7 Key Features of Goods/Services for Utility Token Projects

As defined in Article 3(9) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets – amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 – a utility token is "a type of crypto-asset that is only intended to provide access to a good or a service supplied by its issuer". This crypto-asset does not qualify as a utility token, as its intended use goes beyond providing access to a good or a service supplied solely by the issuer.

D.8 Plans for the token

This section provides an overview of the historical developments related to the FIL crypto-asset and a description of planned or anticipated project milestones as publicly communicated. All forward-looking elements are subject to significant uncertainty. They do not constitute commitments, assurances, or guarantees, and may be modified, delayed, or discontinued at any time. The implementation of past milestones cannot be assumed to continue in the future, and future changes may have adverse effects for token holders.

There is a formally published roadmap for the FIL crypto-asset and/or the Filecoin protocol. Based on the official roadmap (sources: https://fil.org, https://www.filecoin.io/, https://www.protocol.ai/, https://docs.filecoin.io/smart-contracts/fundamentals/roadmap, https://www.filecoin.io/blog/the-2026-filecoin-network-strategy, https://filecoin.cloud/; accessed 2026-06-05), several protocol upgrades, ecosystem initiatives, and crypto-asset-related developments have been communicated that affect the evolution of the Filecoin protocol and the role of the FIL crypto-asset.

Past Milestones:

- Initial Project Concepts (August 2013): Early concepts and prototypes that later evolved into IPFS and Filecoin were developed.

- Protocol Labs Founded (May 2014): Protocol Labs was established to develop decentralised internet infrastructure technologies, including Filecoin.

- Initial Filecoin Paper Released (July 2014): The first Filecoin technical paper was published, outlining the project's objectives and architecture.

- Proof-of-Replication Introduced (Q1 2017): The protocol was redesigned and the Proof-of-Replication mechanism was introduced as a core component of the storage verification model.

- Updated Filecoin Paper Released (July 2017): A revised Filecoin paper introduced the Proof-of-Replication and Proof-of-Spacetime concepts.

- Token Sale Completed (September 2017): The Filecoin token sale concluded, raising approximately USD 205.8 million.

- Public Testnet Launch (December 2019): The Filecoin testnet became available for public testing and network validation.

- Genesis Block Created (24 August 2020): The Filecoin network genesis block was produced, establishing the operational blockchain.

- Mainnet Launch (15 October 2020): Filecoin entered production operation and enabled decentralised storage services on the live network.

- Filecoin Virtual Machine Mainnet Launch (March 2023): Smart contract functionality was introduced through the Filecoin Virtual Machine, expanding the range of applications that could be deployed on the network.

- Waffle Network Upgrade (August 2024): A protocol upgrade introduced several improvements, including enhancements to storage-provider participation and Filecoin Virtual Machine functionality.

- Network Upgrade NV24 Tuk Tuk (November 2024): The network implemented a protocol upgrade containing multiple Filecoin Improvement Proposals.

- Governance Coordination Enhancements (February 2025): The FilPoll V2 governance coordination tool was introduced to support ecosystem governance activities.

- FIL ProPGF Programme Launch (March 2025): The FIL Protocol Grants and Retroactive Public Goods Funding programme was launched to support ecosystem development.

- Network Upgrade NV25 Teep (11 April 2025): The network implemented protocol changes affecting storage economics and operational efficiency.

- Fast Finality Activated (29 April 2025): The F3 Fast Finality system was deployed, significantly reducing transaction finality times.

- Proof of Data Possession Mainnet Launch (06 May 2025): A new data verification mechanism was introduced to support additional storage use cases.

- Network Upgrade NV26 Tok (July 2025): The network implemented additional protocol improvements through a scheduled upgrade.

- Network Upgrade NV27 Golden Week (September 2025): A further protocol upgrade introduced multiple Filecoin Improvement Proposals and ecosystem enhancements.

- Filecoin Onchain Cloud Announced (18 November 2025): The Filecoin ecosystem announced the Filecoin Onchain Cloud initiative to support storage, retrieval and compute workflows.

- Constellation Governance Programme Launch (November 2025): A new governance initiative was introduced to support ecosystem coordination.

- 2026 Network Strategy Published (February 2026): The Filecoin ecosystem published its strategy and roadmap priorities for 2026.

- Filecoin Onchain Cloud Mainnet Deployment (26 March 2026): Filecoin Onchain Cloud became available on mainnet as a production service.

Future Milestones:

- Completion of Final Vesting Periods (2026): Remaining network vesting schedules are expected to conclude, which the Filecoin Foundation has described as the beginning of a new phase of the network's token economics.

- Expansion of Paid Onchain Storage Activity (2026): The roadmap identifies increased adoption of paid onchain storage deals as a strategic objective.

- Strengthening Network Profitability and Cryptoeconomics (2026): Planned initiatives include adjustments to incentives and economic mechanisms intended to support sustainable network participation.

- Scaling Enterprise and Flagship Customer Adoption (2026): The roadmap outlines efforts to increase adoption by enterprise users and large-scale clients.

- Production Expansion of Filecoin Onchain Cloud (2026): Planned work includes further development of hardened services, monitoring tools, automation features and developer tooling.

- Stablecoin Payment Integration (2026): The roadmap contemplates enabling stablecoin-based payment flows and expanding the role of Filecoin Onchain Cloud as a payment layer for storage, retrieval and compute services.

- New Enterprise Integrations and Storage Onramps (2026): Planned integrations and onboarding initiatives are intended to facilitate access to Filecoin services for enterprise and small-to-medium-sized business users.

- Incentive Realignment for Paid Usage (2026): The roadmap contemplates redirecting network incentives towards activities associated with sustainable commercial adoption and paid network usage.

Note: All future milestones are subject to significant uncertainty, including but not limited to technical feasibility, regulatory developments, market adoption, and community governance decisions. The project may modify, delay, or discontinue any of these initiatives at any time. Past implementation or performance outcomes do not constitute an indication of future results, and any such changes may materially affect the characteristics, availability, or perceived value of the FIL crypto-asset for its holders.

D.9 Resource allocation

Based on information from various third-party and industry sources, it is reported that the crypto-asset project associated with the FIL token has conducted multiple funding rounds involving seed financing, venture capital investment, and a large-scale private token sale conducted through a Simple Agreement for Future Tokens (SAFT) structure.

According to publicly referenced information, Protocol Labs, the entity associated with the development of the Filecoin network, completed a seed financing round in 2014, reportedly raising approximately USD 120,000 from investors including Digital Currency Group, Haystack, and Winklevoss Capital.

Public sources further indicate that Protocol Labs completed a venture financing round in 2016, reportedly raising approximately USD 3 million. Reported investors include Techammer, Stanford StartX, Naval Ravikant, Haystack, FundersClub, Fred Ehrsam, Digital Currency Group, DHVC, Boost VC, Ben Davenport, BlueYard Capital, and Union Square Ventures. The composition of the investor group varies across publicly available sources and has not been independently confirmed.

According to publicly available disclosures, the principal financing event associated with the Filecoin project occurred through a SAFT-based token sale conducted in 2017. Public reporting indicates that an advisor sale conducted in July 2017 raised approximately USD 52 million from existing investors and advisors. A subsequent accredited investor offering conducted through CoinList between August and September 2017 reportedly raised total proceeds of approximately USD 205.8 million, including the advisor sale.

Publicly available allocation documentation further indicates that the maximum supply of 2 billion FIL is allocated under the protocol as follows: 15% to Protocol Labs for research, engineering, and network deployment activities, 10% to investors, 5% to the Filecoin Foundation for governance, grants, and ecosystem development initiatives, and 70% to network miners, released over time through block rewards.

The Filecoin Foundation's funding is understood to derive principally from its genesis allocation of 5% of the maximum supply (100 million FIL), based on the publicly referenced allocation documentation. According to publicly available transparency reports, the Foundation reported approximately USD 35.6 million in operating expenditures during fiscal year 2025 (October 2024 to September 2025), together with approximately 2.42 million FIL in FIL-denominated expenditure. Reported programmes included ecosystem grants of approximately USD 5.8 million plus 871,452

FIL, RetroPGF Round 2 in December 2024 distributing approximately 270,000 FIL to 97 projects, RetroPGF Round 3 in December 2025 distributing approximately 500,000 FIL to 91 projects, and FIL ProPGF allocations of approximately USD 3.22 million announced in March 2026.

Genesis allocations were subject to multi-year vesting schedules, including six years for Protocol Labs and the Filecoin Foundation and three years for SAFT investors, with vesting reported to complete in October 2026.

However, all such information is derived exclusively from public announcements, portfolio disclosures, press releases, transparency reports, and third-party publications. The issuer, foundation, or entities associated with the FIL crypto-asset have not independently confirmed the occurrence, precise amounts, valuation, legal structure, or contractual terms of these reported financing rounds. As a result, the referenced investment amounts, investor participation, and any implied cumulative funding figures cannot be independently verified and should be considered indicative only.

D.10 Planned use of collected funds or crypto-assets

Not applicable, as this white paper serves the purpose of admission to trading and is not associated with any fundraising activity for the crypto-asset project.

Part E – Information about the offer to the public of crypto-assets or their admission to trading

E.1 Public offering or admission to trading

Crypto Risk Metrics GmbH is the person seeking admission to trading.

E.2 Reasons for public offer or admission to trading

The purpose of seeking admission to trading is to enable the crypto-asset to be listed on a regulated platform in accordance with the applicable provisions of Regulation (EU) 2023/1114 and Commission Implementing Regulation (EU) 2024/2984. The white paper has been drawn up to comply with the transparency requirements applicable to trading venues.

E.3 Fundraising target

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.4 Minimum subscription goals

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.5 Maximum subscription goals

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.6 Oversubscription acceptance

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.7 Oversubscription allocation

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.8 Issue price

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.9 Official currency or any other crypto-assets determining the issue price

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.10 Subscription fee

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.11 Offer price determination method

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.12 Total number of offered/traded crypto-assets

The maximum supply of the crypto-asset is set at 2,000,000,000 units. However, this maximum will never be reached, as a portion of FIL is permanently removed from circulation through gas fees, penalties, and other mechanisms. Investors should note that changes in the effective supply – including sudden increases in circulating units or unexpected burns – may affect the token's price and liquidity. The effective amount of units available on the market depends on the number of units released by the issuer or other parties at any given time, as well as potential reductions through "burning". As a result, the circulating supply may differ from the total supply.

E.13 Targeted holders

The admission of the crypto-asset to trading is open to all types of investors.

E.14 Holder restrictions

Holder restrictions are subject to the rules applicable to the crypto-asset service provider, as well as any additional restrictions that provider may impose.

E.15 Reimbursement notice

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.16 Refund mechanism

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.17 Refund timeline

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.18 Offer phases

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.19 Early purchase discount

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.20 Time-limited offer

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.21 Subscription period beginning

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.22 Subscription period end

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.23 Safeguarding arrangements for offered funds/crypto-assets

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.24 Payment methods for crypto-asset purchase

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.25 Value transfer methods for reimbursement

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.26 Right of withdrawal

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.27 Transfer of purchased crypto-assets

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.28 Transfer time schedule

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.29 Purchaser's technical requirements

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.30 Crypto-asset service provider (CASP) name

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.31 CASP identifier

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.32 Placement form

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.33 Trading platforms name

The admission to trading is sought on Payward Global Solutions LTD ("Kraken").

E.34 Trading platforms Market identifier code (MIC)

The Market Identifier Code (MIC) of Payward Global Solutions LTD ("Kraken") is PGSL.

E.35 Trading platforms access

The token is intended to be listed on the trading platform operated by Payward Global Solutions LTD ("Kraken"). Access to this platform depends on regional availability and user eligibility under Kraken's terms and conditions. Investors should consult Kraken's official documentation to determine whether they meet the requirements for account creation and token trading.

E.36 Involved costs

The costs involved in accessing the trading platform depend on the specific fee structure and terms of the respective crypto-asset service provider. These may include trading fees, deposit or withdrawal charges, and network-related transaction fees. Investors are advised to consult the applicable fee schedule of the chosen platform before engaging in trading activities.

E.37 Offer expenses

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.38 Conflicts of interest

MiCA-compliant crypto-asset service providers shall have strong measures in place in order to manage conflicts of interest. Due to the broad audience this white paper addresses, potential investors should always check the conflicts-of-interest policy of their respective counterparty.

Crypto Risk Metrics GmbH has established, implemented, and documented comprehensive internal policies and procedures for the identification, prevention, management, and documentation of conflicts of interest in accordance with applicable regulatory requirements. These internal measures are actively applied within the organisation. For the purposes of this specific assessment and the crypto-asset covered by this white paper, a token-specific review has been conducted by Crypto Risk Metrics GmbH. Based on this individual review, no conflicts of interest relevant to this crypto-asset have been identified at the time of preparation of this white paper.

E.39 Applicable law

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

E.40 Competent court

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

Part F – Information about the crypto-assets

F.1 Crypto-asset type

The crypto-asset described in the white paper is classified as a crypto-asset under the Markets in Crypto-Assets Regulation (MiCA) but is neither classified as an electronic money token (EMT) nor an asset-referenced token (ART). It is a digital representation of value that can be stored and transferred using distributed ledger technology (DLT) or similar technology, without embodying or conferring any rights to its holder. The crypto-asset does not aim to maintain a stable value by referencing an official currency, a basket of assets, or any other underlying rights. Instead, its valuation is entirely market-driven, based on supply and demand dynamics, and it is not subject to any stabilisation mechanism. It is neither pegged to any fiat currency nor backed by any external assets, which distinguishes it from EMTs and ARTs. Furthermore, the crypto-asset is not categorised as a financial instrument, deposit, insurance product, pension product, or any other regulated financial product under EU law. It does not grant financial rights, voting rights, or any contractual claims to its holders, and therefore remains outside the scope of regulatory frameworks applicable to traditional financial instruments.

F.2 Crypto-asset functionality

According to publicly available information (source: https://docs.filecoin.io/, accessed 2026-06-05), the FIL token is the native on-chain crypto-asset of the Filecoin network and is used for protocol-

level participation in decentralised data storage, network security, and ecosystem coordination. FIL is used by network participants to pay for storage and retrieval services, provide collateral supporting storage commitments, and facilitate the operation of the Filecoin protocol.

FIL's core functionality is based on supporting the decentralised storage marketplace operated through the Filecoin network. Clients use FIL to compensate storage providers for hosting data and retrieval providers for serving stored content to users. Storage providers are required to commit FIL as pledge collateral when participating in storage activities, and such collateral may be subject to protocol-defined penalties in circumstances where required storage commitments or verification obligations are not fulfilled. Through these mechanisms, FIL functions as an economic coordination instrument intended to support the reliability and operation of the network.

The Filecoin protocol utilises cryptographic verification mechanisms designed to demonstrate the continued storage and availability of data over time. Participants contributing storage capacity may receive incentives denominated in FIL in accordance with protocol-defined rules governing block production, storage commitments, and network participation.

FIL also supports participation in governance-related processes and may be utilised within applications built on the Filecoin Virtual Machine (FVM), including lending, borrowing, and other protocol-based financial activities. The scope and implementation of such functionalities depend on the continued development and operation of the Filecoin ecosystem and associated software infrastructure and may evolve over time.

Within the Filecoin network, FIL is used as the accounting basis for storage payments, retrieval payments, participant incentives, collateral requirements, and transaction fees. The protocol incorporates a token issuance model under which new FIL may enter circulation through mechanisms linked to network participation and long-term network growth objectives. According to publicly available information, the maximum supply is set at 2 billion FIL, although portions of FIL may be permanently removed from circulation through protocol-defined mechanisms such as transaction-fee burning, penalties, and collateral slashing.

The FIL token does not confer ownership, profit participation, governance rights over the issuer or any related entity, or any form of economic entitlement. All functionalities are technical in nature and relate exclusively to interactions within the Filecoin protocol environment. The actual usability of FIL depends on factors such as system stability, storage-provider participation, development progress, governance decisions, and the operational conditions of the Filecoin blockchain, which are outside the control of token holders.

F.3 Planned application of functionalities

Future Milestones:

- Completion of Final Vesting Periods (2026): Remaining network vesting schedules are expected to conclude, which the Filecoin Foundation has described as the beginning of a new phase of the network's token economics.

- Expansion of Paid Onchain Storage Activity (2026): The roadmap identifies increased adoption of paid onchain storage deals as a strategic objective.

- Strengthening Network Profitability and Cryptoeconomics (2026): Planned initiatives include adjustments to incentives and economic mechanisms intended to support sustainable network participation.

- Scaling Enterprise and Flagship Customer Adoption (2026): The roadmap outlines efforts to increase adoption by enterprise users and large-scale clients.

- Production Expansion of Filecoin Onchain Cloud (2026): Planned work includes further development of hardened services, monitoring tools, automation features and developer tooling.

- Stablecoin Payment Integration (2026): The roadmap contemplates enabling stablecoin-based payment flows and expanding the role of Filecoin Onchain Cloud as a payment layer for storage, retrieval and compute services.

- New Enterprise Integrations and Storage Onramps (2026): Planned integrations and onboarding initiatives are intended to facilitate access to Filecoin services for enterprise and small-to-medium-sized business users.

- Incentive Realignment for Paid Usage (2026): The roadmap contemplates redirecting network incentives towards activities associated with sustainable commercial adoption and paid network usage.

Note: All future milestones are subject to significant uncertainty, including but not limited to technical feasibility, regulatory developments, market adoption, and community governance decisions. The project may modify, delay, or discontinue any of these initiatives at any time. Past implementation or performance outcomes do not constitute an indication of future results, and any such changes may materially affect the characteristics, availability, or perceived value of the FIL crypto-asset for its holders.

A description of the characteristics of the crypto asset, including the data necessary for classification of the crypto-asset white paper in the register referred to in Article 109 of Regulation (EU) 2023/1114, as specified in accordance with paragraph 8 of that Article

F.4 Type of crypto-asset white paper

The white paper type is "Other crypto-assets" (i.e. OTHR).

F.5 The type of submission

The type of submission is NEWT, which stands for "New".

F.6 Crypto-asset characteristics

The crypto-asset referred to herein is a crypto-asset other than EMTs and ARTs and is natively implemented on the Filecoin blockchain and is also deployed on the Binance Smart Chain. FIL was

previously deployed on the Huobi ECO Chain network. The crypto-asset is fungible up to 18 decimal places on Filecoin and Binance Smart Chain. The crypto-asset constitutes a digital representation recorded on distributed-ledger technology and does not confer ownership, governance, profit participation, or any other legally enforceable rights. Any functionalities associated with the token are limited to potential technical features within the relevant platform environment. These functionalities do not represent contractual entitlements and may depend on future development decisions, technical design choices, and operational conditions. The crypto-asset does not embody intrinsic economic value; instead, its value, if any, is determined exclusively by market dynamics such as supply, demand, and liquidity in secondary markets.

F.7 Commercial name or trading name

Long Name: "Filecoin" according to the Digital Token Identifier Foundation (www.dtif.org, DTI see F. 13, FFG DTI see F.14 as of 2026-06-04).

F.8 Website of the issuer

https://www.protocol.ai/

F.9 Starting date of offer to the public or admission to trading

2026-07-09

F.10 Publication date

2026-07-09

F.11 Any other services provided by the issuer

No such services are currently known to be provided by the issuer. However, it cannot be excluded that additional services exist or may be offered in the future outside the scope of Regulation (EU) 2023/1114.

F.12 Language or languages of the crypto-asset white paper

EN

F.13 Digital token identifier code used to uniquely identify the crypto-asset or each of the several crypto assets to which the white paper relates

K8B662X5Z, C0SK6LJX1, D3K7WMHT1

F.14 Functionally fungible group digital token identifier

S6702SWRZ

F.15 Voluntary data flag

This white paper has been submitted on a mandatory basis under Regulation (EU) 2023/1114.

F.16 Personal data flag

Yes, this white paper contains personal data as defined in Regulation (EU) 2016/679 (the GDPR).

F.17 LEI eligibility

The issuer is eligible for a Legal Entity Identifier (LEI).

F.18 Home Member State

Germany

F.19 Host Member States

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden

Part G – Information on the rights and obligations attached to the crypto-assets

G.1 Purchaser rights and obligations

The crypto-asset does not grant any legally enforceable or contractual rights or obligations to its holders or purchasers. Any functionalities accessible through the underlying technology are of a purely technical or operational nature and do not constitute rights comparable to ownership, profit participation, governance, or similar entitlements known from traditional financial instruments. Accordingly, holders do not acquire any legally enforceable claim against the issuer of the crypto-asset or any third party.

G.2 Exercise of rights and obligations

As the crypto-asset does not confer any legally enforceable rights or obligations, there are no applicable procedures or conditions for their exercise. Any interaction or functionality that may be available within the project's technical infrastructure – such as participation mechanisms or protocol-level features – serves operational purposes only and does not create, evidence, or constitute any contractual or statutory entitlement.

G.3 Conditions for modifications of rights and obligations

As the crypto-asset does not confer any legally enforceable rights or obligations, there are no conditions or mechanisms for modifying such rights or obligations. Adjustments to the technical protocol, smart contract logic, or related systems may occur in the ordinary course of development or maintenance. Such changes do not alter the legal position of holders, as no contractual rights exist and no rights arise under applicable law or regulation. Holders should not interpret technical updates or governance-related changes as amendments to legally binding entitlements.

G.4 Future public offers

Not applicable.

G.5 Issuer retained crypto-assets

According to publicly available information, a portion of the maximum supply of FIL was allocated at genesis to Protocol Labs, Inc., which is identified in publicly available documentation as the entity responsible for the development and launch of the Filecoin protocol. According to the Filecoin Simple Agreement for Future Tokens (SAFT) Private Placement Memorandum and publicly available Filecoin allocation disclosures (source: https://www.filecoin.io/blog/token-sale-completed, accessed

2026-06-05), 15% of the maximum supply of FIL, corresponding to 300,000,000 FIL out of the maximum supply of 2,000,000,000 FIL, was allocated to Protocol Labs at genesis. Publicly available allocation materials describe this allocation as intended to support research, engineering, deployment, business development, marketing, distribution and related activities associated with the development and growth of the Filecoin ecosystem.

According to publicly available documentation, the Protocol Labs allocation is subject to a six-year vesting schedule commencing upon the launch of the Filecoin mainnet on 2020-10-15. As a result, although the full allocation was assigned at genesis, the allocated FIL was not immediately liquid and became available progressively over time in accordance with the vesting schedule. Publicly available sources indicate that the vesting period is expected to conclude in or around October 2026.

For the purposes of this section, the genesis allocation attributed to Protocol Labs may be considered retained crypto-assets insofar as such crypto-assets were allocated to, controlled by, or vested for the benefit of the issuer and its associated team members and contributors. However, publicly available sources reviewed for this white paper do not provide a comprehensive breakdown of the allocation between Protocol Labs as a legal entity and individual team members, contributors, or affiliated persons. Consequently, no further allocation details can be independently verified from publicly available information.

It should be noted that the information presented above relates to the historical genesis allocation of FIL and the associated vesting arrangements, rather than the issuer's current holdings as of the date of this white paper. No comprehensive and publicly verifiable disclosure has been identified that confirms the precise quantity of FIL currently held, controlled, or beneficially owned by Protocol Labs or its affiliated persons. Furthermore, no publicly disclosed blockchain addresses have been identified that can be independently and conclusively attributed to Protocol Labs for the purposes of verifying current treasury balances. As a result, it is not possible to independently confirm through on-chain analysis the exact quantity, location, or current status of FIL associated with the issuer. Accordingly, the information presented in this section should be understood as a description of the historical genesis allocation and vesting arrangements based on publicly available information, and not as a definitive or independently verifiable statement regarding the issuer's current holdings of FIL.

G.6 Utility token classification

No – the crypto-asset project does not concern utility tokens as defined in Article 3(9) of Regulation (EU) 2023/1114.

G.7 Key features of goods/services of utility tokens

Not applicable, as the crypto-asset described herein is not a utility token.

G.8 Utility tokens redemption

Not applicable, as the crypto-asset described herein is not a utility token.

G.9 Non-trading request

The admission to trading is sought.

G.10 Crypto-assets purchase or sale modalities

Not applicable, as this white paper is written to seek admission to trading, not for the initial offer to the public.

G.11 Crypto-assets transfer restrictions

The crypto-assets themselves are not subject to any technical or contractual transfer restrictions and are generally freely transferable. However, crypto-asset service providers may impose restrictions on buyers or sellers in accordance with applicable laws, internal policies or contractual terms agreed with their clients.

G.12 Supply adjustment protocols

No – there are no fixed protocols that can increase or decrease the supply of the crypto-asset in response to changes in demand as of 2026-06-05.

However, it is possible to decrease the circulating supply by transferring crypto-assets to so-called "burn addresses". These are addresses from which the tokens are no longer intended to be transferred or accessed, effectively removing them from circulation.

G.13 Supply adjustment mechanisms

Not applicable.

G.14 Token value protection schemes

No – the crypto-asset does not have any mechanisms or schemes in place that aim to stabilise or protect its market value. Its value is determined solely by market supply and demand, and may be subject to significant volatility.

G.15 Token value protection schemes description

Not applicable, as the crypto-asset in scope does not have any value protection scheme in place.

G.16 Compensation schemes

No – the crypto-asset does not have any compensation scheme.

G.17 Compensation schemes description

Not applicable, as the crypto-asset in scope does not have any compensation scheme in place.

G.18 Applicable law

This white paper is submitted in the context of an application for admission to trading on a trading platform established in the European Union. Accordingly, this white paper shall be governed by the laws of the Federal Republic of Germany.

G.19 Competent court

Any disputes arising in relation to this white paper or the admission to trading may be brought before the competent courts in Hamburg, Germany.

Part H – information on the underlying technology

H.1 Distributed ledger technology (DLT)

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

H.2 Protocols and technical standards

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

The following applies to Filecoin:

The Filecoin network operates on a defined set of protocols and technical standards intended to support decentralised data storage, transaction processing, and network security.

1. Network Protocols

Filecoin is a decentralised peer-to-peer network that combines blockchain-based transaction settlement with decentralised data storage. Consensus is achieved through the Expected Consensus (EC) protocol, while storage commitments are verified through cryptographic Proof-of-Replication (PoRep) and Proof-of-Spacetime (PoSt) mechanisms. The protocol also supports InterPlanetary Consensus (IPC), a framework for hierarchical subnet architectures that may operate with different consensus mechanisms while remaining connected to the broader Filecoin ecosystem.

2. Transaction and Address Standards

Transactions are represented as messages exchanged between actors, which are specialised on-chain accounts responsible for maintaining network state and executing protocol logic. Messages contain information such as sender and recipient addresses, transferred amounts, method calls, parameters, and gas limits. The network supports both secp256k1 and BLS cryptographic signature schemes for transaction authorisation.

3. Blockchain Data Structure and Block Standards

Filecoin maintains an account-based ledger in which network state is managed through actors. The blockchain is organised as a chain of tipsets rather than individual blocks, allowing multiple valid blocks to be produced at the same height. State and transaction data are stored using cryptographically linked Merkle-based data structures. Data stored by storage providers is generally held off-chain, while content identifiers (CIDs) and cryptographic proofs are recorded on-chain.

4. Upgrade and Improvement Standards

Protocol upgrades and technical changes are coordinated through the Filecoin Improvement Proposal (FIP) process. Proposed changes are publicly discussed by developers, storage providers, and other ecosystem participants before being incorporated into network software implementations and activated through coordinated upgrades.

The following applies to Binance Smart Chain:

Binance Smart Chain (BSC) is a Layer-1 blockchain that utilises a Proof-of-Staked-Authority (PoSA) consensus mechanism. This mechanism combines elements of Proof-of-Authority (PoA) and Delegated-Proof-of-Stake (DPoS) and is intended to secure the network and validate transactions. In PoSA, validators are selected based on their stake and authority, with the goal of providing fast transaction times and low fees while maintaining network security through staking.

The following applies to Huobi ECO Chain:

The HECO Network (Huobi ECO Chain) ceased operations on 2025-01-15.

H.3 Technology used

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

The following applies to Filecoin:

1. Decentralised Ledger

The Filecoin blockchain operates as a decentralised ledger that records FIL transfers, protocol operations, and state transitions. Transactions are validated by network participants and recorded in an append-only blockchain structure intended to provide transparency and verifiable settlement.

2. Account and Actor Model

Filecoin uses an account-based architecture in which state is maintained by actors. Each actor possesses an address, balance, and associated state. Transactions are represented as messages between actors and may transfer FIL or invoke protocol-defined functions. The Filecoin Virtual Machine (FVM) executes actor logic and processes state transitions resulting from valid transactions.

3. Private Key Management

Users are responsible for maintaining control of the private keys and recovery material associated with their wallets. Loss, theft, or compromise of private keys may result in permanent loss of access to FIL holdings and cannot generally be reversed by the network.

4. Cryptographic Integrity and Smart Contract Functionality

Filecoin uses cryptographic hashing, digital signatures, and proof systems to secure transactions and verify network state. The Filecoin Virtual Machine (FVM) supports the execution of built-in protocol actors and user-deployed smart contracts. Through the Filecoin Ethereum Virtual Machine (FEVM), the network also supports compatibility with Ethereum-based smart-contract development tools and execution environments.

The following applies to Binance Smart Chain:

1. BSC-compatible wallets

Tokens on BSC are supported by wallets compatible with the Ethereum Virtual Machine (EVM), such as MetaMask. These wallets can be configured to connect to the BSC network and are designed to interact with BSC using standard Web3 interfaces.

2. Decentralised Ledger

BSC maintains its own decentralised ledger for recording token transactions. This ledger is intended to ensure transparency and security, providing a verifiable record of all activities on the network.

3. BEP-20 token standard

BSC supports tokens implemented under the BEP-20 standard, which is tailored for the BSC ecosystem. This standard is designed to facilitate the creation and management of tokens on the network.

4. Scalability and transaction efficiency

BSC is designed to handle high volumes of transactions with low fees. It leverages its PoSA consensus mechanism to achieve fast transaction times and efficient network performance, making it suitable for applications requiring high throughput.

The following applies to Huobi ECO Chain:

The HECO Network (Huobi ECO Chain) ceased operations on 2025-01-15.

H.4 Consensus mechanism

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

The following applies to Filecoin:

Filecoin utilises Expected Consensus (EC), a probabilistic Byzantine fault-tolerant consensus mechanism designed to align block production with the provision of decentralised storage capacity. Under this model, storage providers participate in consensus and may become eligible to produce blocks based on the storage power they contribute to the network.

Eligibility to produce a block is determined through a cryptographically verifiable leader-election process that incorporates randomness generated by the Drand distributed randomness beacon. A storage provider's probability of being selected is generally proportional to its Quality Adjusted Power, which reflects both storage capacity and certain protocol-defined characteristics of the stored data.

To produce a valid block, an elected storage provider must submit a Winning Proof-of-Spacetime (WinningPoSt), demonstrating continued possession of the storage commitments associated with its claimed storage power. Other network nodes verify blocks, transactions, and state transitions before accepting them into the canonical chain.

Filecoin employs a probabilistic finality model. Because multiple valid blocks may be produced during the same epoch and grouped into tipsets, temporary forks may occur. The protocol resolves competing chains according to the cumulative storage power represented by the chain. As additional epochs are built upon a tipset, the probability of reversal decreases and transactions become increasingly difficult to reorganise.

Storage providers are required to maintain pledge collateral in FIL as an economic security mechanism. Failure to satisfy protocol requirements may result in penalties, loss of storage power, or reductions in pledged collateral.

The following applies to Binance Smart Chain:

Binance Smart Chain (BSC) uses a hybrid consensus mechanism called Proof-of-Staked-Authority (PoSA), which combines elements of Delegated-Proof-of-Stake (DPoS) and Proof-of-Authority (PoA). This method is intended to support fast block times and low fees while maintaining a level of decentralisation and security.

Core components

1. Validators (Cabinet and Candidates): Validators are responsible for producing blocks, validating transactions, and maintaining network security. The validator set consists of up to 45 validators, including 21 "Cabinet" validators and 24 "Candidate" validators, selected based on bonded stake. A subset of validators is selected per epoch to participate in block production.

2. Delegators: Token holders may delegate BNB to validators to support their selection. Delegators share in the rewards generated by validators, providing an economic incentive to participate in staking.

3. Candidates: Validator candidates are nodes that have staked BNB but are not part of the primary validator subset for a given epoch. They may be selected into the active set based on staking rank and can participate in block production with lower probability.

Consensus process

4. Validator selection: Validators are ranked based on the amount of bonded BNB and are updated periodically (approximately every 24 hours). The highest-ranked validators form the active validator set, with Cabinet validators having a higher probability of participating in block production.

5. Block production: Validators take turns producing blocks in a PoA-like manner. For each epoch, a subset of validators is selected to produce and validate blocks sequentially, ensuring high throughput and low latency.

6. Transaction finality: BSC achieves short block times (approximately 0.45 seconds) and fast finality. With Fast Finality enabled, blocks are typically finalised within approximately one second, subject to validator participation.

7. Staking: Validators must stake BNB as collateral and may be subject to slashing in cases of misbehaviour, including double-signing, malicious voting, or prolonged downtime.

8. Delegation and rewards: Validators and delegators are rewarded through transaction fees collected in each block. Validators may share rewards with delegators to attract stake.

9. Transaction fees: BSC does not rely on inflationary block rewards; instead, validators are compensated primarily through transaction fees paid in BNB, aligning incentives with network usage.

The following applies to Huobi ECO Chain:

The HECO Network (Huobi ECO Chain) ceased operations on 2025-01-15.

H.5 Incentive mechanisms and applicable fees

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

The following applies to Filecoin:

1. Token Issuance and Block Rewards

The maximum supply of FIL is limited to 2 billion tokens, although a portion of the supply may be permanently removed from circulation through protocol-level burning mechanisms. New FIL is introduced through a predefined issuance schedule consisting of baseline minting and simple

minting mechanisms. Baseline minting is linked to network growth and storage capacity, while simple minting follows a time-based issuance schedule. Storage providers may receive newly issued FIL through block rewards when selected to produce valid blocks under the Expected Consensus mechanism. A portion of block rewards becomes available immediately, while the remaining portion is released gradually over a vesting period defined by the protocol.

2. Storage and Transaction Fees

Clients may pay storage providers in FIL for storing data on the network. Additional fees may be charged for data retrieval services. Transactions executed on the network require payment of gas fees denominated in FIL, which are intended to compensate for network resource consumption and reduce spam transactions. A portion of transaction fees is permanently burned at the protocol level, while other fee components may be received by the storage provider responsible for producing the relevant block.

3. Collateral Requirements and Penalties

Storage providers are generally required to lock FIL as pledge collateral when committing storage capacity to the network. This collateral serves as an economic security mechanism intended to encourage compliance with protocol requirements. Failure to provide required storage proofs, loss of committed data, or premature termination of storage commitments may result in protocol-defined penalties, including reductions in storage power, forfeiture of collateral, or other financial penalties. These mechanisms are intended to incentivise reliable storage provision and support the integrity of the network.

The following applies to Binance Smart Chain:

Binance Smart Chain (BSC) uses the Proof-of-Staked-Authority (PoSA) consensus mechanism to support network security and incentivise participation from validators and delegators.

Incentive mechanisms

1. Validators: Validators must self-delegate BNB in order to participate in the validator system. Validator selection is staking-based, and validators that rank highly enough enter the active set and participate in block production and transaction validation. Validators are rewarded from transaction fees collected on the network. When a block is produced, most of the block fee is allocated to the validator that proposed the block. A portion is retained as validator commission, while the remainder is allocated for distribution through the validator credit structure.

2. Delegators: BNB holders may delegate BNB to validators. This increases the validator's total stake and may improve its position in the validator ranking. Delegators share in the rewards earned by the validator they support, after deduction of the validator's commission.

3. Candidates: BSC distinguishes between Cabinet, Candidate and Inactive validators. The current model provides that the top 21 validators form the Cabinet, while the validators ranked from 22 to 45 are Candidates. Candidate validators have a smaller chance of producing blocks, but they remain

part of the broader validator structure and support network resilience. Validator roles are updated every 24 hours based on the latest staking information.

4. Economic Security: Validators may be penalised for misconduct or poor performance. Slashable events include double signing, malicious fast-finality voting and unavailability. Depending on the violation, consequences may include removal from the validator set, loss of staking rewards and slashing of part of the validator's self-delegated BNB. The staking model therefore creates an economic incentive for validators and delegators to support reliable validator performance.

Fees on the Binance Smart Chain

5. Transaction fees: Transaction fees on BSC are paid in BNB and are intended to compensate validators for maintaining the network. BSC is designed as a comparatively low-fee network, and smart-contract transactions and transfers require gas fees in BNB.

6. Validator rewards: BSC does not rely on a separate protocol-level block reward. Instead, staking rewards are derived from transaction fees. Most of the block fee is allocated to the proposing validator, then split between validator commission and delegator-linked reward distribution.

7. System-level fee allocation: Part of transaction-fee revenue is collected through the System Reward Contract and used for designated system purposes, including fast-finality rewards.

8. Smart contract fees: Deploying and interacting with smart contracts on BSC requires payment of gas fees in BNB. These fees depend on the computational resources required and form part of the network's overall fee and validator-incentive model.

The following applies to Huobi ECO Chain:

The HECO Network (Huobi ECO Chain) ceased operations on 2025-01-15.

H.6 Use of distributed ledger technology

No – DLT is not operated by the issuer, the offeror, the person seeking admission to trading, or any third party acting on their behalf.

H.7 DLT functionality description

Not applicable, as the DLT is not operated by the issuer, the offeror, the person seeking admission to trading, or any third party acting on their behalf.

H.8 Audit

Given the breadth of the term "technology", it cannot be confirmed that all elements or aspects of the technology employed have undergone a comprehensive and systematic technical examination. Accordingly, no comprehensive audit of the technology used can be confirmed. This white paper focuses primarily on risk-related aspects and therefore does not imply, nor should it be interpreted as implying, that a full assessment or audit of all technological elements has been conducted.

H.9 Audit outcome

Not applicable, as no comprehensive audit of the technology used has been conducted or can be confirmed.

Part I – Information on risks

I.1 Offer-related risks

1. Regulatory and Compliance

Regulatory frameworks applicable to crypto-asset services in the European Union and in third countries are evolving. Supervisory authorities may introduce, interpret, or enforce rules that affect (i) the eligibility of this crypto-asset for admission to trading, (ii) the conditions under which a crypto-asset service provider may offer trading, custody, or transfer services for it, or (iii) the persons or jurisdictions to which such services may be provided. As a result, the crypto-asset service provider admitting this crypto-asset to trading may be required to suspend, restrict, or terminate trading or withdrawals for regulatory reasons, even if the crypto-asset itself continues to function on its underlying network.

2. Trading venue and connection risk

Trading in the crypto-asset depends on the uninterrupted operation of the trading venues on which it is listed and, where applicable, on its technical connections to external liquidity sources or venues. Interruptions such as system downtime, maintenance, faulty integrations, API changes, or failures at an external venue can temporarily prevent order placement, execution, deposits, or withdrawals, even when the underlying blockchain is functioning. In addition, trading platforms in emerging markets may operate under differing governance, compliance, and oversight standards, which can increase the risk of operational failures or disorderly market conditions.

3. Market formation and liquidity conditions

The price and tradability of the crypto-asset depend on actual trading activity on the venues to which the service provider is connected, whether centralised exchanges (CEXs) or decentralised exchanges (DEXs). Trading volumes may at times be low, order books thin, or liquidity concentrated on a single venue. In such conditions, buy or sell orders may not be executed in full or may be executed only at a less favourable price, resulting in slippage.

Volatility: The market price of the crypto-asset may fluctuate significantly over short periods, including for reasons that are not linked to changes in the underlying project or protocol. Periods of limited liquidity, shifts in overall market sentiment, or trading on only a small number of CEXs or DEXs can amplify these movements and lead to higher slippage when orders are executed. As a result, investors may be unable to sell the crypto-asset at or close to a previously observed price, even where no negative project-specific event has occurred.

4. Counterparty and service provider dependence

The admission of the crypto-asset to trading may rely on several external parties, such as connected centralised or decentralised trading venues, liquidity providers, brokers, custodians, or technical integrators. If any of these counterparties fail to perform, suspend their services, or apply internal restrictions, the trading, deposit, or withdrawal of the crypto-asset on the listing crypto-asset service provider can be interrupted or halted.

Quality of counterparties: Trading venues and service providers in certain jurisdictions may operate under regulatory or supervisory standards that are lower or differently enforced than those applicable in the European Union. In such environments, deficiencies in governance, risk management, or compliance may remain undetected, which increases the probability of abrupt service interruptions, investigations, or forced wind-downs.

Delisting and service suspension: The crypto-asset's availability may depend on the internal listing decisions of these counterparties. A delisting or suspension on a key connected venue can materially reduce liquidity or make trading temporarily impossible on the admitting service provider, even if the underlying crypto-asset continues to function.

Insolvency of counterparties: If a counterparty involved in holding, routing, or settling the crypto-asset becomes insolvent, enters restructuring, or is otherwise subject to resolution measures, assets held or processed by that counterparty may be frozen, become temporarily unavailable, or be recoverable only in part or not at all, which can result in losses for clients whose positions were maintained through that counterparty. This risk applies in particular where client assets are held on an omnibus basis or where segregation is not fully recognised in the counterparty's jurisdiction.

5. Operational and information risks

Due to the irrevocability of blockchain transactions, incorrect transaction approvals or the use of wrong networks or addresses will typically make the transferred funds irrecoverable. Because trading may also rely on technical connections to other venues or service providers, downtime or faulty code in these connections can temporarily block trading, deposits, or withdrawals even when the underlying blockchain is functioning. In addition, different groups of market participants may have unequal access to technical, governance, or project-related information, which can lead to information asymmetry and place less informed investors at a disadvantage when making trading decisions.

6. Market access and liquidity concentration risk

If the crypto-asset is only available on a limited number of trading platforms or through a single market-making entity, this may result in reduced liquidity, greater price volatility, or periods of inaccessibility for retail holders.

I.2 Issuer-related risks

1. Insolvency of the issuer

As with any commercial entity, the issuer may face insolvency risks. These may result from insufficient funding, low market interest, mismanagement, or external shocks (e.g. pandemics,

armed conflicts). In such a case, ongoing development, support, and governance of the project may cease, potentially affecting the viability and tradability of the crypto-asset.

2. Legal and regulatory risks

The issuer operates in a dynamic and evolving regulatory environment. Failure to comply with applicable laws or regulations in relevant jurisdictions may result in enforcement actions, penalties, or restrictions on the project's operations. These may negatively impact the crypto-asset's availability, market acceptance, or legal status.

3. Operational risks

The issuer may fail to implement adequate internal controls, risk management, or governance processes. This can result in operational disruptions, financial losses, delays in updating the white paper, or reputational damage.

4. Governance and decision-making

The issuer's management body is responsible for key strategic, operational, and disclosure decisions. Ineffective governance, delays in decision-making, or lack of resources may compromise the stability of the project and its compliance with MiCA requirements. High concentration of decision-making authority or changes in ownership/control can amplify these risks.

5. Reputational risks

The issuer's reputation may be harmed by internal failures, external accusations, or association with illicit activity. Negative publicity can reduce trust in the issuer and impact the perceived legitimacy or value of the crypto-asset.

6. Counterparty dependence

The issuer may depend on third-party providers for certain core functions, such as technology development, marketing, legal advice, or infrastructure. If these partners discontinue their services, change ownership, or underperform, the issuer's ability to operate the project or maintain investor communication may be impaired. This could disrupt project continuity or undermine market confidence, ultimately affecting the crypto-asset's value.

I.3 Crypto-assets-related risks

1. Valuation risk

The crypto-asset does not represent a claim, nor is it backed by physical assets or legal entitlements. Its market value is driven solely by supply and demand dynamics and may fluctuate significantly. In the absence of fundamental value anchors, such assets can lose their entire market value within a very short time. Historical market behaviour has shown that some types of crypto-

assets have become worthless. Investors should be aware that this crypto-asset may lose all of its value.

2. Market volatility risk

Crypto-asset prices can fluctuate sharply due to changes in market sentiment, macroeconomic conditions, regulatory developments, or technology trends. Such volatility may result in rapid and significant losses. Holders should be prepared for the possibility of losing the full amount invested.

3. Liquidity and price-determination risk

Low trading volumes, fragmented trading across venues, or the absence of active market makers can restrict the ability to buy or sell the crypto-asset. In such situations, it is not guaranteed that an observable market price will exist at all times. Spreads may widen materially, and orders may only be executable under unfavourable conditions, which can make liquidation costly or temporarily impossible.

4. Crypto-asset security risk

Loss or theft of private keys, unauthorised access to wallets, or failures of custodial or exchange service providers can result in the irreversible loss of assets. Because blockchain transactions are final, recovery of funds after a compromise is generally impossible.

5. Fraud and scam risk

The pseudonymous and irreversible nature of blockchain transactions can attract fraudulent schemes. Typical forms include fake or unauthorised crypto-assets imitating established ones, phishing attempts, deceptive airdrops, or social-engineering attacks. Investors should exercise caution and verify the authenticity of counterparties and information sources.

6. Legal and regulatory reclassification risk

Legislative or regulatory changes in the European Union or in the Member State where the crypto-asset is admitted to trading may alter its legal classification, permitted uses, or tradability. In third countries, the crypto-asset may be treated as a financial instrument or security, which can restrict its offering, trading, or custody.

7. Absence of investor protection

The crypto-asset is not covered by investor-compensation or deposit-guarantee schemes. In the event of loss, fraud, or insolvency of a service provider, holders may have no access to recourse mechanisms typically available in regulated financial markets.

8. Counterparty risk

Reliance on third-party exchanges, custodians, or intermediaries exposes holders to operational failures, insolvency, or fraud of these parties. Investors should conduct due diligence on service providers, as their failure may lead to the partial or total loss of held assets.

9. Reputational risk

Negative publicity related to security incidents, misuse of blockchain technology, or associations with illicit activity can damage public confidence and reduce the crypto-asset's market value.

10. Community and sentiment risk

Because the crypto-asset's perceived relevance and expected future use depend largely on community engagement and the prevailing sentiment, a loss of public interest, negative coverage or reduced activity of key contributors can materially reduce market demand.

11. Macroeconomic and interest-rate risk

Fluctuations in interest rates, exchange rates, general market conditions, or overall market volatility can influence investor sentiment towards digital assets and affect the crypto-asset's market value.

12. Taxation risk

Tax treatment varies across jurisdictions. Holders are individually responsible for complying with all applicable tax laws, including the reporting and payment of taxes arising from the acquisition, holding, or disposal of the crypto-asset.

13. Anti-money-laundering and counter-terrorist financing risk

Wallet addresses or transactions connected to the crypto-asset may be linked to sanctioned or illicit activity. Regulatory responses to such findings may include transfer restrictions, reporting obligations, or the freezing of assets on certain venues.

14. Market-abuse risk

Due to limited oversight and transparency, crypto-assets may be vulnerable to market-abuse practices such as spoofing, pump-and-dump schemes, or insider trading. Such activities can distort prices and expose holders to sudden losses.

15. Legal ownership and jurisdictional risk

Depending on the applicable law, holders of the crypto-asset may not have enforceable ownership rights or effective legal remedies in cases of disputes, fraud, or service failure. In certain jurisdictions, access to exchanges or interfaces may be restricted by regulatory measures, even if on-chain transfer remains technically possible.

16. Concentration risk

A large proportion of the total supply may be held by a small number of holders. This can enable market manipulation, governance dominance, or sudden large-scale liquidations that adversely affect market stability, price levels, and investor confidence.

I.4 Project implementation-related risks

As this white paper relates to admission to trading of the crypto-asset, the risk description below reflects general implementation risks typically associated with crypto-asset projects and relevant for the crypto-asset service provider. The party admitting the crypto-asset to trading is not involved in the project's implementation and does not assume responsibility for its governance, funding, or execution.

Delays, failures, or changes in the implementation of the project as outlined in its public roadmap or technical documentation may negatively impact the perceived credibility or usability of the crypto-asset. This includes risks related to project governance, resource allocation, technical delivery, and team continuity.

Key-person risk: The project may rely on a limited number of individuals for development, maintenance, or strategic direction. The departure, incapacity, or misalignment of these individuals may delay or derail the implementation.

Timeline and milestone risk: Project milestones may not be met as announced. Delays in feature releases, protocol upgrades, or external integrations can undermine market confidence and affect the adoption, use, or value of the crypto-asset.

Delivery risk: Even if implemented on time, certain functionalities or integrations may not perform as intended or may be scaled back during execution, limiting the crypto-asset's practical utility.

I.5 Technology-related risks

As this white paper relates to admission to trading of the crypto-asset, the following risks concern the underlying distributed ledger technology (DLT), its supporting infrastructure, and related technical dependencies. Failures or vulnerabilities in these systems may affect the availability, integrity, or transferability of the crypto-asset.

1. Blockchain dependency risk

The functionality of the crypto-asset depends on the continuous and stable operation of the blockchain(s) on which it is issued. Network congestion, outages, or protocol errors may temporarily or permanently disrupt on-chain transactions. Extended downtime or degradation in network performance can affect trading, settlement, or the usability of the crypto-asset.

2. Protocol and software vulnerability risk

The protocol rules, client software implementations, execution and consensus layer components, or related technical elements that define the crypto-asset's parameters or govern its transfers may contain coding errors or security vulnerabilities. Exploitation of such weaknesses can result in unintended consequences, including loss of funds or disruption of network functionality.

3. Wallet and key-management risk

The custody of crypto-assets relies on secure private key management. Loss, theft, or compromise of private keys results in irreversible loss of access. Custodians, trading venues, or wallet providers may be targeted by cyberattacks. Compatibility issues between wallet software and changes to the blockchain protocol (e.g. network upgrades) can further limit user access or the ability to transfer the crypto-asset.

Outdated or vulnerable wallet software:

Users relying on outdated, unaudited, or unsupported wallet software may face compatibility issues, security vulnerabilities, or failures when interacting with the blockchain. Failure to update wallet software in line with protocol developments can result in transaction errors, loss of access, or exposure to known exploits.

4. Network security risks

Attack risks: Blockchains may be subject to denial-of-service (DoS) attacks, 51% attacks, or other exploits targeting the consensus mechanism. These can delay transactions, compromise finality, or disrupt the accurate recording of transfers.

Centralisation concerns: Despite claims of decentralisation, a relatively small number of validators, storage providers, stake, storage power, or similar network-relevant concentration factors may increase the risk of collusion, censorship, or coordinated network downtime, which can affect the resilience and operational reliability of the crypto-asset.

5. Bridge and interoperability risk

Where tokens can be bridged or wrapped across multiple blockchains, vulnerabilities in bridge protocols, validator sets, or locking mechanisms may result in loss, duplication, or misrepresentation of assets. Exploits or technical failures in these systems can instantly impact circulating supply, ownership claims, or token fungibility across chains.

6. Forking and protocol-upgrade risk

Network upgrades or disagreements among node operators or validators can result in blockchain “forks”, where the blockchain splits into two or more incompatible versions that continue separately from a shared past. This may lead to duplicate token representations or incompatibilities between exchanges and wallets. Until consensus stabilises, trading or transfers may be disrupted or misaligned. Such situations may be difficult for retail holders to navigate, particularly when trading platforms or wallets display inconsistent token information.

7. Economic-layer and abstraction risk

Mechanisms such as gas relayers, wrapped tokens, or synthetic representations may alter the transaction economics of the underlying token. Changes in transaction costs, token demand, or utility may reduce its usage and weaken both its economic function and perceived value within its ecosystem.

8. Spam and network-efficiency risk

High volumes of low-value ("dust") or automated transactions may congest the network, slow validation times, inflate ledger size, and raise transaction costs. This can impair performance, reduce throughput, and expose address patterns to analysis, thereby reducing network efficiency and privacy.

9. Front-end and access-interface risk

If users rely on centralised web interfaces or hosted wallets to interact with the blockchain, service outages, malicious compromises, or domain expiries affecting these interfaces may block access to the crypto-asset, even while the blockchain itself remains fully functional. Dependence on single web portals introduces a critical point of failure outside the DLT layer.

10. Decentralisation claim risk

While the technical infrastructure may appear distributed, the actual governance or economic control of the project may lie with a small set of actors. This disconnect between marketing claims and structural reality can lead to regulatory scrutiny, reputational damage, or legal uncertainty – especially if the project is presented as 'community-governed' without substantiation.

I.6 Mitigation measures

None.

Part J – Information on the sustainability indicators in relation to adverse impact on the climate and other environment-related adverse impacts

J.1 Adverse impacts on climate and other environment-related adverse impacts

S.1 Name

Crypto Risk Metrics GmbH

S.2 Relevant legal entity identifier

39120077M9TG0O1FE242

S.3 Name of the crypto-asset

Filecoin

S.4 Consensus Mechanism

The crypto-asset in scope is native to the Filecoin blockchain and is also available on the Binance Smart Chain. FIL was previously available on the Huobi ECO Chain network, which was retired on 2025-01-15. The crypto-asset follows the standards described below.

The following applies to Filecoin:

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Eligibility to produce a block is determined through a cryptographically verifiable leader-election process that incorporates randomness generated by the Drand distributed randomness beacon. A storage provider's probability of being selected is generally proportional to its Quality Adjusted Power, which reflects both storage capacity and certain protocol-defined characteristics of the stored data.

To produce a valid block, an elected storage provider must submit a Winning Proof-of-Spacetime (WinningPoSt), demonstrating continued possession of the storage commitments associated with its claimed storage power. Other network nodes verify blocks, transactions, and state transitions before accepting them into the canonical chain.

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Storage providers are required to maintain pledge collateral in FIL as an economic security mechanism. Failure to satisfy protocol requirements may result in penalties, loss of storage power, or reductions in pledged collateral.

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Binance Smart Chain (BSC) uses a hybrid consensus mechanism called Proof-of-Staked-Authority (PoSA), which combines elements of Delegated-Proof-of-Stake (DPoS) and Proof-of-Authority (PoA). This method is intended to support fast block times and low fees while maintaining a level of decentralisation and security.

Core components

1. Validators (Cabinet and Candidates): Validators are responsible for producing blocks, validating transactions, and maintaining network security. The validator set consists of up to 45 validators, including 21 “Cabinet” validators and 24 “Candidate” validators, selected based on bonded stake. A subset of validators is selected per epoch to participate in block production.

2. Delegators: Token holders may delegate BNB to validators to support their selection. Delegators share in the rewards generated by validators, providing an economic incentive to participate in staking.

3. Candidates: Validator candidates are nodes that have staked BNB but are not part of the primary validator subset for a given epoch. They may be selected into the active set based on staking rank and can participate in block production with lower probability.

Consensus process

4. Validator selection: Validators are ranked based on the amount of bonded BNB and are updated periodically (approximately every 24 hours). The highest-ranked validators form the active validator set, with Cabinet validators having a higher probability of participating in block production.

5. Block production: Validators take turns producing blocks in a PoA-like manner. For each epoch, a subset of validators is selected to produce and validate blocks sequentially, ensuring high throughput and low latency.

6. Transaction finality: BSC achieves short block times (approximately 0.45 seconds) and fast finality. With Fast Finality enabled, blocks are typically finalised within approximately one second, subject to validator participation.

7. Staking: Validators must stake BNB as collateral and may be subject to slashing in cases of misbehaviour, including double-signing, malicious voting, or prolonged downtime.

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9. Transaction fees: BSC does not rely on inflationary block rewards; instead, validators are compensated primarily through transaction fees paid in BNB, aligning incentives with network usage.

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2. Storage and Transaction Fees

Clients may pay storage providers in FIL for storing data on the network. Additional fees may be charged for data retrieval services. Transactions executed on the network require payment of gas fees denominated in FIL, which are intended to compensate for network resource consumption and reduce spam transactions. A portion of transaction fees is permanently burned at the protocol level, while other fee components may be received by the storage provider responsible for producing the relevant block.

3. Collateral Requirements and Penalties

Storage providers are generally required to lock FIL as pledge collateral when committing storage capacity to the network. This collateral serves as an economic security mechanism intended to encourage compliance with protocol requirements. Failure to provide required storage proofs, loss of committed data, or premature termination of storage commitments may result in protocol-defined penalties, including reductions in storage power, forfeiture of collateral, or other financial penalties. These mechanisms are intended to incentivise reliable storage provision and support the integrity of the network.

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Binance Smart Chain (BSC) uses the Proof-of-Staked-Authority (PoSA) consensus mechanism to support network security and incentivise participation from validators and delegators.

Incentive mechanisms

1. Validators: Validators must self-delegate BNB in order to participate in the validator system. Validator selection is staking-based, and validators that rank highly enough enter the active set and participate in block production and transaction validation. Validators are rewarded from transaction

fees collected on the network. When a block is produced, most of the block fee is allocated to the validator that proposed the block. A portion is retained as validator commission, while the remainder is allocated for distribution through the validator credit structure.

2. Delegators: BNB holders may delegate BNB to validators. This increases the validator's total stake and may improve its position in the validator ranking. Delegators share in the rewards earned by the validator they support, after deduction of the validator's commission.

3. Candidates: BSC distinguishes between Cabinet, Candidate and Inactive validators. The current model provides that the top 21 validators form the Cabinet, while the validators ranked from 22 to 45 are Candidates. Candidate validators have a smaller chance of producing blocks, but they remain part of the broader validator structure and support network resilience. Validator roles are updated every 24 hours based on the latest staking information.

4. Economic Security: Validators may be penalised for misconduct or poor performance. Slashable events include double signing, malicious fast-finality voting and unavailability. Depending on the violation, consequences may include removal from the validator set, loss of staking rewards and slashing of part of the validator's self-delegated BNB. The staking model therefore creates an economic incentive for validators and delegators to support reliable validator performance.

Fees on the Binance Smart Chain

5. Transaction fees: Transaction fees on BSC are paid in BNB and are intended to compensate validators for maintaining the network. BSC is designed as a comparatively low-fee network, and smart-contract transactions and transfers require gas fees in BNB.

6. Validator rewards: BSC does not rely on a separate protocol-level block reward. Instead, staking rewards are derived from transaction fees. Most of the block fee is allocated to the proposing validator, then split between validator commission and delegator-linked reward distribution.

7. System-level fee allocation: Part of transaction-fee revenue is collected through the System Reward Contract and used for designated system purposes, including fast-finality rewards.

8. Smart contract fees: Deploying and interacting with smart contracts on BSC requires payment of gas fees in BNB. These fees depend on the computational resources required and form part of the network's overall fee and validator-incentive model.

The following applies to Huobi ECO Chain:

The HECO Network (Huobi ECO Chain) ceased operations on 2025-01-15.

S.6 Beginning of the period to which the disclosure relates

2025-05-28

S.7 End of the period to which the disclosure relates

2026-05-28

S.8 Energy consumption

2409026.87016 kWh/a

S.9 Energy consumption sources and methodologies

For the calculation of energy consumption, the so-called “bottom-up” approach is used. Nodes are considered the central factor for the energy consumption of the underlying network. The relevant assumptions are based on empirical findings obtained through public information sites, open-source crawlers, and crawlers developed in-house. The main determinants for estimating the hardware used within the network are the requirements for operating the relevant client software. The energy consumption of the relevant hardware devices was measured in certified test laboratories. Where available, the Functionally Fungible Group Digital Token Identifier (FFG DTI) is used to determine all technically equivalent implementations of the crypto-asset in scope, and the relevant mappings are updated regularly based on data from the Digital Token Identifier Foundation.

Information regarding the hardware used and the number of participants in the network is based on assumptions that are verified on a best-effort basis using empirical data. In general, participants are assumed to act largely economically rationally. In line with the precautionary principle, conservative assumptions are made where uncertainty exists, meaning that estimates tend towards the higher end of the reasonably plausible adverse impacts.

To determine the energy consumption of a token, the energy consumption of the underlying blockchain networks is calculated first. A proportionate share of that energy use is then attributed to the token based on its activity level within the network (e.g. transaction volume, contract execution).

S.10 Renewable energy consumption

37.9124163173 %

S.11 Energy intensity

0.00178 kWh

S.12 Scope 1 DLT GHG emissions – Controlled

0.00000 tCO2e/a

S.13 Scope 2 DLT GHG emissions – Purchased

801.75644 tCO2e/a

S.14 GHG intensity

0.00059 kgCO2e

S.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the locations of the nodes are determined using public information sites, open-source and in-house-developed crawlers. Where no information is available on the geographic distribution of nodes, comparable reference networks are used, taking into account similarities in incentivisation structure and consensus mechanism. This geographic information is then combined with publicly available data from Our World in Data. The resulting intensity is calculated as the marginal energy consumption with respect to one additional transaction.

Ember (2025); Energy Institute, Statistical Review of World Energy (2024), with major processing by Our World in Data. "Share of electricity generated by renewables - Ember and Energy Institute" [dataset]. Underlying sources: Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy". Retrieved from: https://ourworldindata.org/grapher/share-electricity-renewables

S.16 Key GHG sources and methodologies

To determine GHG emissions, the locations of the nodes are determined using public information sites, open-source crawlers, and crawlers developed in-house. Where no information is available on the geographic distribution of nodes, comparable reference networks are used, taking into account similarities in incentivisation structure and consensus mechanism. This geographic information is then combined with publicly available data from Our World in Data. The resulting intensity is calculated as the marginal emission intensity with respect to one additional transaction.

Ember (2025); Energy Institute, Statistical Review of World Energy (2024), with major processing by Our World in Data. "Carbon intensity of electricity generation – Ember and Energy Institute" [dataset]. Underlying sources: Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy". Retrieved from: https://ourworldindata.org/grapher/carbon-intensity-electricity. Licensed under CC BY 4.0.

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