

**White paper drafted under the  
European Markets in Crypto-  
Assets Regulation (EU)  
2023/1114 for FFG D5RG2FHH0**

## Preamble

### 00. Table of Contents

Preamble	2
01. Date of notification	8
02. Statement in accordance with Article 6(3) of Regulation (EU) 2023/1114	8
03. Compliance statement in accordance with Article 6(6) of Regulation (EU) 2023/1114	8
04. Statement in accordance with Article 6(5), points (a), (b), (c), of Regulation (EU) 2023/1114	8
05. Statement in accordance with Article 6(5), point (d), of Regulation (EU) 2023/1114	8
06. Statement in accordance with Article 6(5), points (e) and (f), of Regulation (EU) 2023/1114	8
Summary	8
07. Warning in accordance with Article 6(7), second subparagraph, of Regulation (EU) 2023/1114	8
08. Characteristics of the crypto-asset	8
09. Information about the quality and quantity of goods or services to which the utility tokens give access and restrictions on the transferability	9
10. Key information about the offer to the public or admission to trading	9
Part A – Information about the offeror or the person seeking admission to trading	9
A.1 Name	9
A.2 Legal form	9
A.3 Registered address	10
A.4 Head office	10
A.5 Registration date	10
A.6 Legal entity identifier	10
A.7 Another identifier required pursuant to applicable national law	10
A.8 Contact telephone number	10
A.9 E-mail address	10
A.10 Response time (Days)	10
A.11 Parent company	10
A.12 Members of the management body	10
A.13 Business activity	10
A.14 Parent company business activity	11
A.15 Newly established	11
A.16 Financial condition for the past three years	11
A.17 Financial condition since registration	12

Part B – Information about the issuer, if different from the offeror or person seeking admission to trading	12
B.1 Issuer different from offeror or person seeking admission to trading	12
B.2 Name	12
B.3 Legal form	12
B.4 Registered address	12
B.5 Head office	12
B.6 Registration date	13
B.7 Legal entity identifier	13
B.8 Another identifier required pursuant to applicable national law	13
B.9 Parent company	13
B.10 Members of the management body	13
B.11 Business activity	13
B.12 Parent company business activity	13
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	13
C.1 Name	13
C.2 Legal form	13
C.3 Registered address	14
C.4 Head office	14
C.5 Registration date	14
C.6 Legal entity identifier	14
C.7 Another identifier required pursuant to applicable national law	14
C.8 Parent company	14
C.9 Reason for crypto-asset white paper preparation	14
C.10 Members of the management body	14
C.11 Operator business activity	14
C.12 Parent company business activity	14
C.13 Other persons drawing up the crypto-asset white paper according to Article 6(1), second subparagraph, of Regulation (EU) 2023/1114	14
C.14 Reason for drawing the white paper by persons referred to in Article 6(1), second subparagraph, of Regulation (EU) 2023/1114	14
Part D – Information about the crypto-asset project	14
D.1 Crypto-asset project name	14
D.2 Crypto-assets name	15
D.3 Abbreviation	15

D.4 Crypto-asset project description	15
D.5 Details of all natural or legal persons involved in the implementation of the crypto-asset project	15
D.6 Utility Token Classification	15
D.7 Key Features of Goods/Services for Utility Token Projects	16
D.8 Plans for the token	16
D.9 Resource allocation	18
D.10 Planned use of collected funds or crypto-assets	19
Part E – Information about the offer to the public of crypto-assets or their admission to trading	19
E.1 Public offering or admission to trading	19
E.2 Reasons for public offer or admission to trading	19
E.3 Fundraising target	19
E.4 Minimum subscription goals	19
E.5 Maximum subscription goals	19
E.6 Oversubscription acceptance	20
E.7 Oversubscription allocation	20
E.8 Issue price	20
E.9 Official currency or any other crypto-assets determining the issue price	20
E.10 Subscription fee	20
E.11 Offer price determination method	20
E.12 Total number of offered/traded crypto-assets	20
E.13 Targeted holders	20
E.14 Holder restrictions	20
E.15 Reimbursement notice	21
E.16 Refund mechanism	21
E.17 Refund timeline	21
E.18 Offer phases	21
E.19 Early purchase discount	21
E.20 Time-limited offer	21
E.21 Subscription period beginning	21
E.22 Subscription period end	21
E.23 Safeguarding arrangements for offered funds/crypto-assets	21
E.24 Payment methods for crypto-asset purchase	21
E.25 Value transfer methods for reimbursement	21
E.26 Right of withdrawal	22
E.27 Transfer of purchased crypto-assets	22

E.28 Transfer time schedule	22
E.29 Purchaser's technical requirements	22
E.30 Crypto-asset service provider (CASP) name	22
E.31 CASP identifier	22
E.32 Placement form	22
E.33 Trading platforms name	22
E.34 Trading platforms Market identifier code (MIC)	22
E.35 Trading platforms access	22
E.36 Involved costs	22
E.37 Offer expenses	23
E.38 Conflicts of interest	23
E.39 Applicable law	23
E.40 Competent court	23
Part F – Information about the crypto-assets	23
F.1 Crypto-asset type	23
F.2 Crypto-asset functionality	24
F.3 Planned application of functionalities	24
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	25
F.4 Type of crypto-asset white paper	25
F.5 The type of submission	25
F.6 Crypto-asset characteristics	25
F.7 Commercial name or trading name	26
F.8 Website of the issuer	26
F.9 Starting date of offer to the public or admission to trading	26
F.10 Publication date	26
F.11 Any other services provided by the issuer	26
F.12 Language or languages of the crypto-asset white paper	26
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	26
F.14 Functionally fungible group digital token identifier	26
F.15 Voluntary data flag	26
F.16 Personal data flag	26
F.17 LEI eligibility	26
F.18 Home Member State	26
F.19 Host Member States	27

Part G – Information on the rights and obligations attached to the crypto-assets	27
G.1 Purchaser rights and obligations	27
G.2 Exercise of rights and obligations	27
G.3 Conditions for modifications of rights and obligations	27
G.4 Future public offers	27
G.5 Issuer retained crypto-assets	28
G.6 Utility token classification	28
G.7 Key features of goods/services of utility tokens	28
G.8 Utility tokens redemption	28
G.9 Non-trading request	28
G.10 Crypto-assets purchase or sale modalities	28
G.11 Crypto-assets transfer restrictions	28
G.12 Supply adjustment protocols	28
G.13 Supply adjustment mechanisms	28
G.14 Token value protection schemes	28
G.15 Token value protection schemes description	29
G.16 Compensation schemes	29
G.17 Compensation schemes description	29
G.18 Applicable law	29
G.19 Competent court	29
Part H – information on the underlying technology	29
H.1 Distributed ledger technology (DLT)	29
H.2 Protocols and technical standards	29
H.3 Technology used	31
H.4 Consensus mechanism	31
H.5 Incentive mechanisms and applicable fees	32
H.6 Use of distributed ledger technology	32
H.7 DLT functionality description	32
H.8 Audit	32
H.9 Audit outcome	33
Part I – Information on risks	33
I.1 Offer-related risks	33
I.2 Issuer-related risks	34
I.3 Crypto-assets-related risks	36
I.4 Project implementation-related risks	38
I.5 Technology-related risks	39

I.6 Mitigation measures	41
Part J – Information on the sustainability indicators in relation to adverse impact on the climate and other environment-related adverse impacts	41
J.1 Adverse impacts on climate and other environment-related adverse impacts	41
S.1 Name	41
S.2 Relevant legal entity identifier	41
S.3 Name of the crypto-asset	41
S.4 Consensus Mechanism	41
S.5 Incentive Mechanisms and Applicable Fees	42
S.6 Beginning of the period to which the disclosure relates	42
S.7 End of the period to which the disclosure relates	42
S.8 Energy consumption	42
S.9 Energy consumption sources and methodologies	42
S.10 Renewable energy consumption	43
S.11 Energy intensity	43
S.12 Scope 1 DLT GHG emissions – Controlled	43
S.13 Scope 2 DLT GHG emissions – Purchased	43
S.14 GHG intensity	43
S.15 Key energy sources and methodologies	43
S.16 Key GHG sources and methodologies	43

## **01. Date of notification**

This white paper was notified on 2026-05-29.

## **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 Ethereum Eth crypto-asset (ETH) to which this white paper refers is a crypto-asset other than an EMT or ART, native to the Ethereum blockchain as of 2026-05-27 and according to the DTI FFG shown in F.14. The maximum supply of the crypto-asset is unlimited. The first activity on the Ethereum blockchain occurred on 2015-07-30 (Block Height: 0, source: <https://etherscan.io/block/0>, accessed 2026-05-27).

The crypto-asset was originally proposed by Vitalik Buterin and subsequently developed and launched by a broader group of developers in 2015. ETH follows an adaptive issuance model influenced by protocol upgrades implemented through Ethereum Improvement Proposals (EIPs). The crypto-asset is primarily used to pay transaction fees and for the execution of transactions and smart contracts on the Ethereum network. ETH may also be used for value-transfer and payment purposes. Transactions and smart contract execution on Ethereum are secured through the blockchain's Proof-of-Stake (PoS) consensus mechanism introduced following The Merge. Holders of ETH may participate in network validation through staking mechanisms supported by the protocol.

The crypto-asset does not grant any legally enforceable or contractual rights or obligations to its holders or purchasers, including rights to ownership, profit participation, governance, or claims against any entity. Any functionalities accessible through the underlying technology are purely technical or operational in nature.

## **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, federal state of Hamburg.

### **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 39120077M9TG001FE242.

### **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**

<b>Identity</b>	<b>Function</b>	<b>Business Address</b>
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**

The Ethereum network was initially described in a white paper authored by Vitalik Buterin and later formalised in the Ethereum Yellow Paper authored by Gavin Wood. The network was subsequently developed and launched by a broader group of developers, with the Ethereum mainnet, known as Frontier, launching on 2015-07-30. As of the date of this white paper (2026-05-27), the Ethereum network is not operated by a single legal entity and no issuing entity can be determined in a formal legal sense.

### **B.3 Legal form**

Due to the nature of the decentralised network, the crypto-asset does not have a legal form as referred to in Article 6(1)(b) of Regulation (EU) 2023/1114.

### **B.4 Registered address**

Due to the explanation given in field B.3 the crypto-asset issuer does not have a registered address.

Not applicable.

Not applicable.

### **B.5 Head office**

As no issuing entity can be determined in a formal legal sense as of the date of this white paper, no head office address can be specified.

Not applicable.

Not applicable.

### **B.6 Registration date**

Since the issuer of the crypto-asset did not register in a legal form there is no date of registration. The first block on the network was produced on 2015-07-30.

### **B.7 Legal entity identifier**

Not applicable.

### **B.8 Another identifier required pursuant to applicable national law**

Not applicable.

### **B.9 Parent company**

The crypto-asset and its decentralised network are not operated by a legal entity and thus do not have a parent company.

### **B.10 Members of the management body**

<b>Identity</b>	<b>Function</b>	<b>Business Address</b>
Not applicable	Not applicable	Not applicable

### **B.11 Business activity**

The crypto-asset and its decentralised network are not operated by a legal entity and thus do not have a business activity.

### **B.12 Parent company business activity**

The crypto-asset and its decentralised network are not operated by a legal entity and thus do not have a parent company.

## **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: "Ethereum Eth", Short name: "ETH" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-27).

## D.2 Crypto-assets name

Long name: "Ethereum Eth" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-27).

## D.3 Abbreviation

Short name: "ETH" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-27).

## D.4 Crypto-asset project description

As described within the official documentation (<https://ethereum.org/en/whitepaper/>, accessed 2026-05-27), the crypto-asset is intended to function as a decentralised, permissionless crypto-asset operating on a public, pseudonymous blockchain. The crypto-asset's blockchain is structured as a linked chain of blocks, each containing transactions and smart contract executions, with each block referencing the previous block's hash to maintain integrity. Prior to 15 September 2022, the Ethereum blockchain used the Proof-of-Work consensus mechanism, after which it transitioned to Proof-of-Stake. Governance relies on Ethereum Improvement Proposals (EIPs) and community consensus among developers, validators, and users, intending to facilitate continuous upgrades whilst maintaining decentralisation and security.

## 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
Stiftung Ethereum	Other person involved in implementation	Zeughausgasse 7a, 6300 Zug	Switzerland
Vitalik Buterin	Other person involved in implementation	Zeughausgasse 7a, 6300 Zug	Switzerland
Aya Miyaguchi	Other person involved in implementation	Zeughausgasse 7a, 6300 Zug	Switzerland
Patrick Storchenegger	Other person involved in implementation	Zeughausgasse 7a, 6300 Zug	Switzerland
Hsiao-Wei Wang	Other person involved in implementation	Zeughausgasse 7a, 6300 Zug	Switzerland

## 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 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 service supplied solely by the issuer.

## **D.8 Plans for the token**

The crypto-asset is a decentralised blockchain platform designed to enable smart contracts and decentralised applications (dApps). It was proposed by Vitalik Buterin in 2013, originally as an extension of Bitcoin’s scripting capabilities and subsequently as a stand-alone platform with a Turing-complete virtual machine. Since its launch in 2015, the crypto-asset has undergone multiple major upgrades to enhance scalability, security and efficiency (source: <https://ethereum.org/roadmap/>, accessed 2026-05-27).

Past Milestones:

### 1. White Paper (2013-11-27)

- Vitalik Buterin circulates the Ethereum white paper, titled A Next-Generation Smart Contract and Decentralised Application Platform, outlining the concept of a Turing-complete blockchain capable of executing smart contracts.

### 2. Launch – Frontier (2015-07-30)

- The crypto-asset's mainnet goes live, introducing ETH as its native asset and enabling smart contracts.

### 3. Homestead Upgrade (2016-03-14)

- The first major upgrade improved security and efficiency and completed the protocol's transition out of its initial beta phase.

### 4. The DAO Exploit and Ethereum Hard Fork (2016-07-20)

- A major exploit in The DAO, an early Ethereum-based project, led to a contentious hard fork, splitting the network into Ethereum (ETH) and Ethereum Classic (ETC).

### 5. Metropolis Phase 1 — Byzantium (2017-10-16)

- Improved privacy, security and transaction efficiency, and introduced zk-SNARK precompiles.

#### 6. Metropolis Phase 2 — Constantinople and St. Petersburg (2019-02-28)

- Reduced gas costs, prepared for the eventual Proof-of-Stake (PoS) transition, and delayed the "difficulty bomb" (a mechanism that encouraged migration away from Proof-of-Work (PoW)).

#### 7. Istanbul Upgrade (2019-12-08)

- Improved cross-chain interoperability and reduced gas costs for certain operations.

#### 8. Beacon Chain Launch (2020-12-01)

- Introduced PoS via the Beacon Chain, a parallel blockchain designed for the future consensus mechanism.

#### 9. London Hard Fork & EIP-1559 (2021)

- Implemented EIP-1559, restructuring the fee market by burning a portion of transaction fees and reducing net issuance of the crypto-asset.

#### 10. Paris (The Merge) (2022-09-15)

- The crypto-asset fully transitioned from PoW to PoS, deprecating mining and reducing the crypto-asset's energy consumption by approximately 99.95%.

#### 11. Shanghai and Capella (Shapella) Upgrade (2023-04-12)

- Enabled staking withdrawals, allowing validators to unlock staked tokens for the first time since the PoS transition.

#### 12. Dencun Upgrade — EIP-4844 and Proto-Danksharding (2024-03-13)

- Introduced proto-danksharding via "blob" transactions, significantly reducing data-availability costs for Layer-2 rollups and improved scalability.

#### 13. Pectra Upgrade (2025-05-07)

- The Pectra upgrade introduced multiple protocol changes, including EIP-7702 account-code delegation, EIP-7251 validator balance changes and EIP-7691 blob-capacity increases.

#### 14. Fusaka Upgrade (2025-12-03)

- The Fusaka upgrade activated on the Ethereum mainnet on 2025-12-03. The upgrade introduced Peer Data Availability Sampling (PeerDAS) through EIP-7594, additional blob-capacity functionality for Layer 2 scaling, and protocol changes affecting gas limits, transaction processing and cryptographic functionality.

Future Milestones:

1. Glamsterdam Upgrade (targeted H1 2026)

- The upgrade is expected to introduce protocol changes including Enshrined Proposer-Builder Separation (EIP-7732) and Block-Level Access Lists (EIP-7928), affecting block construction and transaction-processing efficiency. The timing and final scope of the upgrade remain uncertain.

2. Hegotá Upgrade (targeted H2 2026)

- The next named upgrade after Glamsterdam, currently listed on the official Ethereum roadmap as "in development" with a target window of the second half of 2026.

3. Full Danksharding (date not specified)

- The Ethereum development discussions continue to include future implementations related to Full Danksharding and additional data-availability improvements intended to further support Layer 2 scalability and rollup functionality.

4. Verkle Trees & State Expiry (date not specified)

- Ethereum development discussions continue to include the potential introduction of Verkle Trees and related stateless-client functionality intended to reduce node-storage requirements and improve state-management efficiency.

5. Ethereum's Long-Term Scalability & Security Upgrades (date not specified)

- Continued improvements to rollups, staking mechanisms, and security models to maintain decentralisation and efficiency.

Note: All future milestones are subject to significant uncertainty, including but not limited to technical feasibility, regulatory developments, market adoption, and community governance decisions. Future proposals may be modified, delayed, rejected, or discontinued through community-driven development and consensus processes. 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 ETH crypto-asset for its holders.

## D.9 Resource allocation

According to its own 2024 report, the Ethereum Foundation held a treasury portfolio of approximately \$970.2 million as of 2024-10-31, split between \$788.7 million in crypto-assets (of which 99.45% was held in ETH, representing 0.26% of the total ETH supply on that date and including 26,701 ETH already committed to the Client Incentive Program) and \$181.5 million in non-crypto investments and assets. The Foundation states that it follows a conservative treasury management policy, periodically converting ETH into fiat in order to ensure sufficient operational runway across multi-year market cycles (source: <https://ethereum.foundation/report-2024.pdf>, accessed 2026-05-27).

Given the decentralised nature of the Ethereum ecosystem, no entity could be identified as the issuer of the ETH crypto-asset for the purposes of this section. The information presented above regarding the Ethereum Foundation is therefore provided solely as contextual information concerning a prominent ecosystem participant and should not be interpreted as indicating control over the ETH crypto-asset, the Ethereum network, or the total supply of ETH.

### **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**

There is no fixed maximum supply for the ETH crypto-asset. The total supply of ETH in existence changes over time as a function of two protocol-level mechanisms operating in opposite directions: new ETH is issued as protocol rewards to validators who secure the network through staking, while a portion of every transaction fee (the "base fee") is permanently removed from circulation under the mechanism introduced by EIP-1559. The net change in supply in any given period is therefore determined by network activity and the level of staking participation, and the supply may be net inflationary or net deflationary depending on prevailing conditions.

The total supply of the ETH crypto-asset as of 2026-05-27 is 120,685,456 ETH. This figure represents the total supply at that reference date only and will not remain constant after the date of this white paper.

## **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 to any additional restrictions such 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 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 not governed by a stabilisation mechanism. It is neither pegged to any fiat currency nor backed by any external assets, thereby clearly distinguishing 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, ensuring that it remains outside the scope of regulatory frameworks applicable to traditional financial instruments.

## **F.2 Crypto-asset functionality**

The ETH crypto-asset is the native cryptocurrency of the Ethereum network, a decentralised, public blockchain platform that supports the execution of smart contracts and decentralised applications (dApps) through the Ethereum Virtual Machine (EVM). Transactions and state transitions are validated and recorded on a public distributed ledger through a Proof-of-Stake (PoS) consensus mechanism, in which validators secure the network by staking ETH.

Within the Ethereum network, ETH performs several technical functions. It is used to pay transaction fees, denominated in units of "gas", that are required to execute transactions and run smart-contract code on the network. It is used as the staking asset that secures the network: validators must deposit ETH to participate in consensus and receive protocol-issued rewards for doing so. It can also be held and transferred between participants on a peer-to-peer basis, and is used as a medium of exchange and as collateral within the broader Ethereum ecosystem.

The total supply of ETH is not fixed and changes over time as a result of the consensus and fee-market mechanisms of the Ethereum protocol. New ETH is issued as protocol rewards to validators that participate in consensus. A portion of every transaction fee (the "base fee") is permanently removed from circulation under the mechanism introduced by EIP-1559, with the rate of burn varying in line with network activity. Validators that breach their consensus obligations (for example through double signing) may have part of their staked ETH burned through the protocol's "slashing" mechanism. The net change in the total supply of ETH in any given period is determined by the combined effect of these mechanisms and may be positive or negative depending on prevailing network conditions. None of these mechanisms alter the ETH balance held in any individual holder's wallet other than through transactions or staking activity initiated by that holder or by the validator with which their ETH is associated.

The ETH crypto-asset does not confer ownership, profit participation, governance rights over any entity, or any form of economic entitlement. All functionalities are technical in nature and relate exclusively to interactions within the Ethereum network. The actual usability of ETH depends on factors such as network stability, software implementation, development progress, and the operational conditions of the underlying distributed ledger, which are outside the control of token holders.

## **F.3 Planned application of functionalities**

Future Milestones:

### 1. Glamsterdam Upgrade (targeted H1 2026)

- The upgrade is expected to introduce protocol changes including Enshrined Proposer-Builder Separation (EIP-7732) and Block-Level Access Lists (EIP-7928), affecting block construction and transaction-processing efficiency. The timing and final scope of the upgrade remain uncertain.

## 2. Hegotá Upgrade (targeted H2 2026)

- The next named upgrade after Glamsterdam, currently listed on the official Ethereum roadmap as "in development" with a target window of the second half of 2026.

## 3. Full Danksharding (date not specified)

- The Ethereum development discussions continue to include future implementations related to Full Danksharding and additional data-availability improvements intended to further support Layer 2 scalability and rollup functionality.

## 4. Verkle Trees & State Expiry (date not specified)

- Ethereum development discussions continue to include the potential introduction of Verkle Trees and related stateless-client functionality intended to reduce node-storage requirements and improve state-management efficiency.

## 5. Ethereum's Long-Term Scalability & Security Upgrades (date not specified)

- Continued improvements to rollups, staking mechanisms, and security models to maintain decentralisation and efficiency.

Note: All future milestones are subject to significant uncertainty, including but not limited to technical feasibility, regulatory developments, market adoption, and community governance decisions. Future proposals may be modified, delayed, rejected, or discontinued through community-driven development and consensus processes. 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 ETH 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 MODI, which stands for "Modification".

#### **F.6 Crypto-asset characteristics**

The crypto-asset referred to herein is a crypto-asset other than EMTs and ARTs, native to the Ethereum blockchain. The crypto-asset is fungible up to 18 digits after the decimal point. 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: "Ethereum Eth" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-27).

#### **F.8 Website of the issuer**

Not applicable.

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

2025-05-05

#### **F.10 Publication date**

2025-06-02

#### **F.11 Any other services provided by the issuer**

As no issuer is identified for the crypto-asset, 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**

X9J9K872S

#### **F.14 Functionally fungible group digital token identifier**

D5RG2FHH0

#### **F.15 Voluntary data flag**

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

#### **F.16 Personal data flag**

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

#### **F.17 LEI eligibility**

LEI eligibility cannot be assessed, as no separate issuer is specified as a legal person in this white paper.

#### **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 claim capable of legal enforcement against the issuer or any third party.

### **G.2 Exercise of rights and obligations**

As the crypto-asset does not establish 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 technical infrastructure of the project – such as participation mechanisms or protocol-level features – serves operational purposes only and does not create or constitute evidence of 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 under which such rights could be modified.

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 or regulatory rights exist. 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**

The token does not appear to be issued by a formal company or foundation in the traditional sense. Instead, it follows a decentralised approach.

## **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**

The ETH crypto-asset is not subject to a supply adjustment protocol for the purposes of Annex I, Part G of Regulation (EU) 2023/1114. The mechanisms affecting the total supply of ETH, including issuance to validators, the base-fee burn mechanism introduced by EIP-1559, and slashing penalties for validator misconduct, are described elsewhere in this white paper and do not constitute a supply adjustment protocol responding to changes in demand or a reference value.

## **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 Ethereum blockchain and follows the standards described below.

### **H.2 Protocols and technical standards**

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

The crypto-asset operates on a defined set of protocols and technical standards that are intended to ensure its security, decentralisation, and functionality. Key items are set out below.

#### 1. Network protocols

Ethereum operates as a decentralised, peer-to-peer network. Nodes communicate using the DevP2P networking stack, with RLPx as the encrypted transport layer for peer-to-peer messages.

Transaction ordering and finality are secured through a Proof-of-Stake (PoS) consensus mechanism. Validators on the Beacon Chain propose blocks, attest to them, and finalise them through Casper FFG operating on top of the LMD-GHOST fork-choice rule. Smart contract execution is performed by the Ethereum Virtual Machine (EVM), which interprets EVM bytecode within the gas limits set by the protocol and by the transaction sender.

## 2. Transaction and address standards

Ethereum addresses are 20-byte identifiers, derived as the last 20 bytes of the Keccak-256 hash of the uncompressed elliptic-curve public key (excluding the 0x04 prefix). They are commonly represented as 40-character hexadecimal strings with a 0x prefix and an optional EIP-55 mixed-case checksum.

The protocol currently supports the following transaction types:

- Type 0: legacy transactions (pre-EIP-1559).
- Type 1: access-list transactions (EIP-2930).
- Type 2: dynamic-fee transactions with base-fee burning (EIP-1559).
- Type 3: blob-carrying transactions (EIP-4844), introduced with the Dencun upgrade on 2024-03-13.
- Type 4: set-code transactions (EIP-7702), introduced with the Pectra upgrade on 2025-05-07, allow externally owned accounts (EOAs) to authorise delegated code execution during transactions, without permanently converting the account into a smart contract. This enables features such as transaction batching, sponsored gas payments and delegated signing.

## 3. Blockchain data structure and block standards

The Ethereum state consists of accounts (externally owned accounts and smart contracts) together with their associated storage and code, organised in Modified Merkle Patricia Tries to allow efficient verification.

Each block contains:

- a block header, comprising the parent hash, state root, transactions root, receipts root, timestamp, gas limit, gas used, and the proposer's signature, among other fields;
- the ordered list of transactions, including smart-contract executions and value transfers; and
- blob commitments, where applicable, referring to data published to the data availability layer under EIP-4844.

Block size is not fixed in bytes. It is constrained by a per-block gas limit, which is adjustable within protocol-defined bounds and currently targets approximately 60 million gas following EIP-7935 (Fusaka, activated on 2025-12-03). EIP-7825 (Fusaka) also introduces a per-transaction gas cap of 16,777,216 gas to improve block composability and resilience against denial-of-service patterns.

The data availability layer used by Layer 2 rollups, introduced through EIP-4844, was further developed by EIP-7691 (Pectra, 2025-05-07), which raised the maximum number of blob commitments per block, and by EIP-7594 (Fusaka, 2025-12-03), which introduced Peer Data Availability Sampling (PeerDAS). PeerDAS enables nodes to verify that blob data has been published by sampling small portions of it, rather than downloading every blob in full. Following PeerDAS, Ethereum uses Blob Parameter Only (BPO) forks, introduced by EIP-7892, to adjust blob targets and maxima between major upgrades.

#### 4. Upgrade and improvement standards

Ethereum protocol upgrades are coordinated through the Ethereum Improvement Proposal (EIP) process. EIPs are published openly, reviewed by core developers and the wider community, and bundled into named hard-fork upgrades. The most recent network upgrades are the Pectra upgrade (2025-05-07) and the Fusaka upgrade (2025-12-03). The next named upgrade currently under preparation by the Ethereum core developers is referred to as Glamsterdam.

### H.3 Technology used

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

1. Decentralised Ledger: The Ethereum blockchain acts as a decentralised ledger for all ETH transactions, maintaining an append-only record of transfers and account balances to support transparency and verifiable settlement.

2. Account Model: Ethereum uses two account types: externally owned accounts (EOAs), which are controlled through private keys, and contract accounts, which are controlled through deployed smart contract code. Following the Pectra upgrade on 2025-05-07, EOAs can additionally authorise delegated code execution through EIP-7702 transactions without permanently converting the account into smart contracts.

3. Private Key Management: Users must securely store the private keys and recovery material associated with their wallets. Loss or compromise of a private key may result in irreversible loss of access to the associated ETH balance.

4. Cryptographic Integrity: Ethereum uses ECDSA over the secp256k1 elliptic curve for key generation and digital signatures on the execution layer. Keccak-256 hashing is used for transaction hashing, state hashing and address derivation. Ethereum addresses are derived from the last 20 bytes of the Keccak-256 hash of the public key. On the consensus layer, BLS (Boneh-Lynn-Shacham) signatures are used to aggregate validator attestations under the Proof-of-Stake consensus mechanism.

### H.4 Consensus mechanism

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

Ethereum uses a Proof-of-Stake (PoS) consensus mechanism introduced with The Merge on 2022-09-15, which replaced the previous Proof-of-Work consensus model. The PoS mechanism is implemented through Gasper, combining Casper-FFG for finality with the LMD-GHOST fork-choice rule for chain selection. Validators participate in consensus by staking ETH through the Beacon Chain. Validators are pseudo-randomly selected to propose new blocks, while other validators attest to the validity of proposed blocks. The network operates using 12-second slots grouped into epochs of 32 slots. Under normal network conditions, finality is typically achieved after two epochs, approximately 12.8 minutes, through Casper-FFG. The LMD-GHOST fork-choice rule determines the canonical chain based on the accumulated weight of validator attestations. Validators that engage in certain malicious behaviour, such as equivocation or contradictory attestations, may be subject to slashing penalties, while offline validators may incur inactivity penalties. Subsequent network upgrades, including Dencun (2024-03-13), Pectra (2025-05-07) and Fusaka (2025-12-03), introduced protocol changes affecting Ethereum's consensus mechanism and Layer 2 functionality.

## **H.5 Incentive mechanisms and applicable fees**

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

Ethereum's Proof-of-Stake (PoS) mechanism secures the network through validator incentives and protocol-defined penalties. Validators are required to stake ETH in order to participate in block proposal and attestation activities. A minimum of 32 ETH is required to activate a validator. Following the Pectra upgrade on 2025-05-07, EIP-7251 increased the maximum effective balance per validator from 32 ETH to 2,048 ETH. Validators may receive protocol-defined rewards for proposing blocks, attesting to valid blocks and participating in sync committees. Rewards consist of newly issued ETH and transaction-related fees. Transaction fees on Ethereum follow the mechanism introduced by EIP-1559, under which each transaction includes a base fee that is burned at the protocol level and an optional priority fee paid to the validator proposing the relevant block. Validators that engage in certain malicious behaviour, including equivocation or contradictory attestations, may be subject to slashing penalties. Validators that fail to participate correctly in consensus activities may also incur inactivity penalties. These mechanisms are intended to support validator participation and the economic security of the Ethereum network.

## **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**

As the term "technology" encompasses a broad range of components, it cannot be confirmed that all elements or aspects of the technology employed have undergone a comprehensive and systematic technical examination. Accordingly, the answer to whether an audit of the technology used has been conducted must be no. 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 platform admitting it 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 though 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 admitting 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-type 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 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**

Interpretative note for this section: The risk factors set out in this Part I.2 follow the structure of the applicable MiCA white paper template for crypto-assets other than asset-referenced tokens or e-money tokens under Title II of MiCA, including references to issuer-related risks. For the purposes of

this Part I.2, references to an “issuer”, “issuer-related risks”, or similar terms are to be read in line with the definition of “issuer” under MiCA, including any natural or legal person, or other undertaking, that issues crypto-assets. Where this white paper does not specify a separate issuer, the relevant risk descriptions should be understood as referring, as applicable, to persons, entities, undertakings, arrangements, or governance structures that may materially influence the crypto-asset or the related project. This may include, for example, foundations, core contributor entities, developers, maintainers, governance participants, or other relevant project-related actors, to the extent such information is available.

#### 1. Absence or insolvency of an identifiable issuer

Where an identifiable issuer exists, that issuer may face insolvency risks. These may result from insufficient funding, low market interest, mismanagement, legal or regulatory developments, or external shocks, including pandemics or armed conflicts. In such a case, ongoing development, support, communication, or governance of the crypto-asset project may be reduced, suspended, or discontinued, potentially affecting the viability, availability, market acceptance, or 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 – such as memecoins or purely speculative tokens – 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. 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, report 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**

Interpretative note for this section: The risk factors set out in this Part I.4 follow the structure of the applicable MiCA white paper template for crypto-assets other than asset-referenced tokens or e-money tokens under Title II of MiCA, including the template category of project implementation-related risks. Where no separate issuer, central project operator, or other clearly identifiable legal person responsible for implementing the crypto-asset project is specified in this white paper, references to the project, its implementation, or project-related actors should be understood, as applicable, as referring to persons, entities, governance structures, technical contributor groups, foundations, maintainers, validators, ecosystem participants, or other actors that may materially influence the development, maintenance, operation, upgrade, or broader evolution of the crypto-asset or the related network. The person seeking admission to trading is not involved in the implementation of the crypto-asset project and does not assume responsibility for its governance, funding, development, maintenance, operation, or execution.

The principal project implementation-related risks for the crypto-asset are as follows:

1. Key-contributor and concentration risk: The continued development, maintenance, and upgrading of the crypto-asset and the related network may depend on a limited number of core protocol contributors, client-software development teams, and supporting organisations such as foundations. The departure, incapacity, loss of funding, or strategic misalignment of such contributors or organisations, or an over-reliance on a dominant client implementation, may delay, fragment, or otherwise adversely affect the implementation and ongoing evolution of the crypto-asset.

2. Timeline and milestone risk: Protocol upgrades, feature releases, scaling improvements, or other initiatives set out in any public roadmap or technical documentation may not be delivered as

announced, may be delayed, or may be abandoned. Such delays or changes can undermine market confidence and affect the adoption, use, or perceived value of the crypto-asset.

3. Delivery risk: Even where an upgrade or feature is delivered as planned, it may not perform as intended, may introduce unintended effects, or may be scaled back during or after deployment, which may limit the practical functionality or expected benefits of the crypto-asset.

## **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. Even after extensive peer review, the use of multiple independent client implementations, and ongoing community auditing, undetected vulnerabilities may persist, particularly given the protocol's technical complexity and the regular cadence of consensus-affecting upgrades.

### **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 or a high concentration of stake 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**

39120077M9TG001FE242

#### **S.3 Name of the crypto-asset**

Ethereum Eth

#### **S.4 Consensus Mechanism**

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

Ethereum uses a Proof-of-Stake (PoS) consensus mechanism introduced with The Merge on 2022-09-15, which replaced the previous Proof-of-Work consensus model. The PoS mechanism is implemented through Gasper, combining Casper-FFG for finality with the LMD-GHOST fork-choice rule for chain selection. Validators participate in consensus by staking ETH through the Beacon Chain. Validators are pseudo-randomly selected to propose new blocks, while other validators attest to the validity of proposed blocks. The network operates using 12-second slots grouped into epochs of 32 slots. Under normal network conditions, finality is typically achieved after two epochs, approximately 12.8 minutes, through Casper-FFG. The LMD-GHOST fork-choice rule determines the canonical chain based on the accumulated weight of validator attestations. Validators that engage in certain malicious behaviour, such as equivocation or contradictory attestations, may be subject to slashing penalties, while offline validators may incur inactivity penalties. Subsequent network upgrades, including Dencun (2024-03-13), Pectra (2025-05-07) and Fusaka (2025-12-03), introduced protocol changes affecting Ethereum’s consensus mechanism and Layer 2 functionality.

## S.5 Incentive Mechanisms and Applicable Fees

The crypto-asset in scope is native to the Ethereum blockchain and follows the standards described below.

Ethereum's Proof-of-Stake (PoS) mechanism secures the network through validator incentives and protocol-defined penalties. Validators are required to stake ETH in order to participate in block proposal and attestation activities. A minimum of 32 ETH is required to activate a validator. Following the Pectra upgrade on 2025-05-07, EIP-7251 increased the maximum effective balance per validator from 32 ETH to 2,048 ETH. Validators may receive protocol-defined rewards for proposing blocks, attesting to valid blocks and participating in sync committees. Rewards consist of newly issued ETH and transaction-related fees. Transaction fees on Ethereum follow the mechanism introduced by EIP-1559, under which each transaction includes a base fee that is burned at the protocol level and an optional priority fee paid to the validator proposing the relevant block. Validators that engage in certain malicious behaviour, including equivocation or contradictory attestations, may be subject to slashing penalties. Validators that fail to participate correctly in consensus activities may also incur inactivity penalties. These mechanisms are intended to support validator participation and the economic security of the Ethereum network.

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

2024-03-22

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

2025-03-22

## S.8 Energy consumption

2390166.00000 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.

## **S.10 Renewable energy consumption**

37.9124101186 %

## **S.11 Energy intensity**

0.00007 kWh

## **S.12 Scope 1 DLT GHG emissions – Controlled**

0.00000 tCO<sub>2</sub>e/a

## **S.13 Scope 2 DLT GHG emissions – Purchased**

795.47849 tCO<sub>2</sub>e/a

## **S.14 GHG intensity**

0.00002 kgCO<sub>2</sub>e

## **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.

