

**White paper drafted under the  
European Markets in Crypto-  
Assets Regulation (EU)  
2023/1114 for FFG 76QS7QCXB**

## 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	10
A.1 Name	10
A.2 Legal form	10
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	11
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	13
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	13
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	14
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	16
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	20
E.4 Minimum subscription goals	20
E.5 Maximum subscription goals	20
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	21
E.14 Holder restrictions	21
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	22
E.25 Value transfer methods for reimbursement	22
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	23
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	27
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	27
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	29
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 (DTL)	29
H.2 Protocols and technical standards	29
H.3 Technology used	30
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	33
H.9 Audit outcome	33
Part I – Information on risks	33
I.1 Offer-related risks	33
I.2 Issuer-related risks	35
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	43
S.7 End of the period to which the disclosure relates	43
S.8 Energy consumption	43
S.9 Energy consumption sources and methodologies	43
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	44

## **01. Date of notification**

This white paper was notified on 2026-04-27.

## **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 crypto-asset ADA referred to in this white paper is a crypto-asset other than EMTs and ARTs and is deployed natively on the Cardano network, according to the DTI FFG shown in section F.14, as of 2026-04-22. The first activity on Cardano can be identified on 2017-09-23 (block hash: 5f20df933584822601f9e3f8c024eb5eb252fe8cefb24d1317dc3d432e940ebb, source: <https://adastat.net/blocks/5f20df933584822601f9e3f8c024eb5eb252fe8cefb24d1317dc3d432e940ebb>, accessed 2026-04-22). The Cardano mainnet was officially announced on 2017-09-29. The maximum supply of the crypto-asset is 45,000,000,000 tokens.

Cardano is a public, permissionless blockchain network designed to support the transfer of value and the execution of decentralised applications and smart contracts. The network uses the Ouroboros proof-of-stake consensus mechanism to validate transactions and produce blocks. Its architecture separates networking, consensus, settlement and scripting functions, with the settlement layer using an Extended Unspent Transaction Output model and the scripting layer supporting smart contract execution through Plutus. Cardano also supports the issuance and management of native assets directly on-chain without requiring separate smart contracts for basic token creation and transfer.

ADA is the native crypto-asset of the Cardano network and is used to pay transaction fees and fees associated with smart contract execution. It is required for participation in the network's proof-of-stake mechanism, including staking and delegation to stake pools, and may be used in connection with on-chain governance processes. ADA is also used to transfer value on the network and to interact with applications deployed on Cardano. Staking rewards are derived from transaction fees and protocol-level distribution from the on-chain reserve in accordance with the network's monetary design.

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

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

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

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

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

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

### A.1 Name

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

### A.2 Legal form

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

### A.3 Registered address

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

DE-HH

### A.4 Head office

The head office is identical to the registered address.

### A.5 Registration date

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

### A.6 Legal entity identifier

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

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

### **A.13 Business activity**

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

### **A.14 Parent company business activity**

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

### **A.15 Newly established**

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

### **A.16 Financial condition for the past three years**

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

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

2024 (unaudited): loss of EUR 50,891.81

2023 (unaudited): loss of EUR 27,665.32

2022: profit of EUR 104,283.00

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

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

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

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

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

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

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

### **A.17 Financial condition since registration**

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

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

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

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

### **B.2 Name**

The crypto-asset does not appear to be issued by a formal company or foundation as a legal entity. Instead, it follows a decentralised approach.

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

Not applicable.

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

Not applicable.

Not applicable.

Not applicable.

**B.5 Head office**

Not applicable.

Not applicable.

Not applicable.

**B.6 Registration date**

Not applicable, as the project follows a decentralised approach.

**B.7 Legal entity identifier**

Not applicable, as the project follows a decentralised approach.

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

Not applicable.

**B.9 Parent company**

Not applicable.

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

Identity	Function	Business Address
Not applicable	Not applicable	Not applicable

**B.11 Business activity**

Not applicable.

**B.12 Parent company business activity**

Not applicable.

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

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

**C.2 Legal form**

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

**C.3 Registered address**

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

#### **C.4 Head office**

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

#### **C.5 Registration date**

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

#### **C.6 Legal entity identifier**

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

#### **C.7 Another identifier required pursuant to applicable national law**

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

#### **C.8 Parent company**

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

#### **C.9 Reason for crypto-Asset white paper Preparation**

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

#### **C.10 Members of the Management body**

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

#### **C.11 Operator business activity**

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

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

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

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

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

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

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

### **Part D – Information about the crypto-asset project**

#### **D.1 Crypto-asset project name**

Long Name: "Cardano ADA", Short Name: "ADA" 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 2026-04-22).

#### **D.2 Crypto-assets name**

Long Name: "Cardano ADA" 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 2026-04-22).

### D.3 Abbreviation

Short Name: "ADA" 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 2026-04-22).

### D.4 Crypto-asset project description

According to public information published in the Cardano documentation (source: <https://docs.cardano.org/>, accessed 2026-04-22), the Cardano project is a decentralised Layer-1 blockchain network designed to support smart-contract applications, digital-asset issuance, and token transfers within an on-chain environment. Its architecture incorporates the Ouroboros Proof-of-Stake consensus protocol, under which block production is carried out by stake pools based on stake participation within the network. Cardano also provides a native smart-contract environment, uses an Extended Unspent Transaction Output (EUTXO) model for transaction processing and state handling, and includes technical components such as native multi-asset support and protocol upgrade mechanisms intended to facilitate changes across development phases without restarting the network. The protocol further supports transaction processing, on-chain data storage, and continuing technical development relating to network scalability, governance, interoperability, and application deployment. The ADA crypto-asset functions as a core technical element within this broader framework. It is used to pay transaction fees on the network and may also be used in connection with stake delegation, block-production incentives, and governance-related processes within the Cardano ecosystem.

The project does not involve the granting of ownership, profit-participation rights, or legal claims against the Cardano protocol or its contributors. Instead, it centres on the creation of a technical environment in which the ADA crypto-asset may serve as an operational input for certain protocol processes. The long-term evolution of the Cardano system, including the scope of available features, the stake-pool participation and delegation framework, governance arrangements, leader-selection mechanisms, and the operational continuity of the infrastructure, may vary based on technical, economic, and regulatory considerations. All future developments remain subject to change.

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

Name of person	Type of person	Business address of person	Domicile of company
Charles Hoskinson	Other person involved in implementation	Cannot be found	Cannot be found
Jeremy Wood	Other person involved in implementation	Cannot be found	Cannot be found
Input Output Global, Inc.	Other person involved in implementation	1912 Capitol Ave Ste 500 Cheyenne, WY 82001 USA	United States
Emurgo Education Pte. Ltd.	Other person involved in implementation	71 Robinson Road, #13-119, Singapore 068895, Singapore	Singapore

<b>Name of person</b>	<b>Type of person</b>	<b>Business address of person</b>	<b>Domicile of company</b>
Cardano Stiftung	Other person involved in implementation	Dammstrasse 16, 6300 Zug, Switzerland	Switzerland
Ken Kodama	Other person involved in implementation	71 Robinson Road, #13-119, Singapore 068895, Singapore	Singapore

## **D.6 Utility Token Classification**

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

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

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

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

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

There is a formally published roadmap for the ADA crypto-asset and the Cardano protocol. Based on the official roadmap (sources: <https://roadmap.cardano.org/en/>, <https://docs.cardano.org/about-cardano/evolution/eras-and-phases>, <https://iohk.io/en/blog/posts/2025/01/29/what-s-next-for-cardano/>; all accessed 2026-04-22), several protocol upgrades, ecosystem initiatives, and crypto-asset-related developments have been communicated that affect the evolution of the Cardano protocol and the role of the ADA crypto-asset.

Past milestones:

- Research and Initial Funding (2015 to January 2017): The Cardano project commenced with research relating to scalability, interoperability, and sustainability. Between October 2015 and January 2017, a pre-launch token voucher sale was conducted in Asia across four tranches.

- Byron Era Mainnet Launch (29 September 2017): The Cardano mainnet was launched on a federated network, enabling transactions involving the native ADA crypto-asset.
  
- Shelley Era Hard Fork (29 July 2020): The network transitioned from a federated model to a more decentralised model and introduced staking and delegation features relevant to the operation and economic role of ADA.
  
- Allegra Era Upgrade (16 December 2020): The protocol introduced token-locking functionality, described as a prerequisite for later smart-contract functionality.
  
- Mary Era Upgrade (1 March 2021): Cardano became a multi-asset ledger, enabling the creation and transfer of native assets on the ledger without requiring smart contracts for issuance.
  
- Alonzo Era Upgrade (12 September 2021): The Plutus smart-contract platform was introduced, enabling smart-contract-based applications on Cardano.
  
- Vasil Upgrade / Babbage Era (22 September 2022): The upgrade introduced changes intended to improve scalability and performance, including reference inputs, inline datums, and reference scripts.
  
- Valentine Upgrade (14 February 2023): Support for SECP elliptic curves was added, with the stated aim of improving interoperability with other blockchain ecosystems.
  
- Chang 1 / Conway Era (1 September 2024): The first batch of decentralised governance features under CIP-1694 was introduced, including functionality for on-chain parameter changes.
  
- Plomin Hard Fork / Conway Era (29 January 2025): The governance feature set was further completed through the introduction of Delegated Representatives (DReps) and full on-chain governance actions.
  
- Governance Actions and Treasury Withdrawals (August to September 2025): The community carried out the first treasury withdrawals to fund ecosystem projects and elected the first Constitutional Committee.
  
- Constitutional Ratification and Parameter Changes (January to February 2026): The community ratified an updated Cardano Constitution and subsequently approved the first community-led protocol parameter changes on-chain.
  
- Catalyst Transition Announcement (24 February 2026): It was announced that stewardship of Project Catalyst would transition from IOG to the Cardano Foundation in order to support continuity of community funding arrangements.

Future milestones:

- 2026 Scaling and Adoption Initiatives (2026): The Cardano Foundation communicated plans to increase its demand-generation budget in 2026 to support ecosystem-related events and adoption initiatives.
- Hydra v1.3 and Further Development (2026 onward): Ongoing work on the Hydra Layer 2 solution includes production hardening, implementation of partial fan-out for excessive UTXO handling, and further development of fast-finality features for decentralised-finance-related applications.
- Ouroboros Leios Implementation (2026 onward): Ouroboros Leios is being developed as a throughput-focused consensus upgrade for Cardano, with the objective of increasing throughput through a revised block-processing design.
- Ouroboros Peras (2026 onwards): The Cardano project has communicated ongoing development of Ouroboros Peras, an upgrade to the Ouroboros Praos consensus protocol intended to accelerate transaction settlement.
- Dijkstra Era (Planned): A further ledger era named Dijkstra is planned, with a stated focus on Plutus v4, consensus and ledger integration, and Conway-related refactors.
- Euler Era (Planned): A subsequent ledger era named Euler is planned, although its full scope has not yet been determined in the provided material.
- Long-term Governance Rollout (next three years): The roadmap indicates a continued focus on governance usability, voter participation, and further decentralisation of ecosystem integration over the coming three years.
- Ouroboros Omega (Long-term): Ouroboros Omega is described as a longer-term consensus objective intended to combine higher performance under favourable conditions with robust security guarantees, including multi-resource security concepts.

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

## **D.9 Resource allocation**

According to information publicly available from the Cardano Genesis Block Distribution and official project documentation, the initial allocation of resources for the ADA token was determined at the network's inception during the pre-sale event. The total amount of ADA created at launch amounted to 31,112,484,646, as confirmed on-chain. The maximum supply of ADA is 45,000,000,000 tokens.

Publicly available information further indicates that the initial ADA allocation, serving as the primary resource base for the project's technical and business development, was distributed as follows:

25,927,070,538 ADA were allocated to public sales, while 5,185,414,108 ADA, representing 20% of the total initial supply, were allocated to the Technical and Business Development Pool. According to publicly referenced information, this pool was distributed among key ecosystem entities as follows: 648,176,761 ADA to the Cardano Foundation, 2,074,165,644 ADA to EMURGO, and 2,463,071,701 ADA to Input Output Global (IOHK).

In addition, publicly available information indicates that the Cardano Foundation continues to hold substantial financial and crypto-asset resources. According to the Cardano Foundation Financial Insights Report 2025 (source: <https://activityfinancialreport.cardanofoundation.org/#page=1>, accessed 2026-04-22), the Foundation presented a market-based reference valuation of approximately CHF 287.5 million in total assets, comprising approximately CHF 148.3 million in ADA, CHF 73.3 million in BTC, and CHF 65.9 million in cash, cash equivalents, and financial assets. The same report further indicates that, under the Foundation's statutory financial statements as of 31 December 2025, total assets amounted to CHF 132.707 million, including CHF 20.124 million in cash and cash equivalents, CHF 65.486 million in crypto-assets, and CHF 43.903 million in financial assets. The notes to the financial statements further state that the Foundation held 561,357,269 ADA and 656 BTC as of 31 December 2025.

However, all such information is derived from publicly available genesis allocation data, official project documentation, on-chain references, and the Cardano Foundation Financial Insights Report 2025. Neither the issuer nor all entities associated with the ADA crypto-asset have independently confirmed, within this white paper, the precise current allocation, control, encumbrance, or effective deployability of all such resources across the broader Cardano ecosystem. As a result, the referenced allocation figures, holdings, and asset values should be considered indicative only. In particular, market-based reference values disclosed by the Cardano Foundation are presented for transparency and context and do not replace statutory accounting treatment.

The investor should note that while the on-chain distribution of ADA can be publicly verified, a blockchain address does not necessarily correspond to a single natural or legal person. Consequently, it is not possible to precisely determine the current allocation of ADA among all participants or to predict the future economic influence or actions of any given entity.

## **D.10 Planned use of Collected funds or crypto-Assets**

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

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

### **E.1 Public offering or admission to trading**

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

### **E.2 Reasons for public offer or admission to trading**

The purpose of seeking admission to trading is to enable the crypto-asset to be listed on a regulated platform in accordance with the applicable provisions of Regulation (EU) 2023/1114 and

Commission Implementing Regulation (EU) 2024/2984. The white paper has been drawn up to comply with the transparency requirements applicable to trading venues.

### **E.3 Fundraising target**

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

### **E.4 Minimum subscription goals**

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

### **E.5 Maximum subscription goals**

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

### **E.6 Oversubscription acceptance**

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

### **E.7 Oversubscription allocation**

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

### **E.8 Issue price**

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

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

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

### **E.10 Subscription fee**

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

### **E.11 Offer price determination method**

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

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

The total supply of the crypto-asset is set at 45,000,000,000 units. Investors should note that changes in the token supply can have a negative impact. The effective amount of tokens available on the market depends on the number of tokens released or otherwise made available by relevant holders or other parties at any given time, as well as potential reductions in circulating availability

where tokens are transferred to addresses that are designed or understood to be provably unspendable. As a result, the circulating supply may differ from the total supply.

### **E.13 Targeted holders**

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

### **E.14 Holder restrictions**

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

### **E.15 Reimbursement notice**

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

### **E.16 Refund mechanism**

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

### **E.17 Refund timeline**

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

### **E.18 Offer phases**

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

### **E.19 Early purchase discount**

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

### **E.20 Time-limited offer**

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

### **E.21 Subscription period beginning**

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

### **E.22 Subscription period end**

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

### **E.23 Safeguarding arrangements for offered funds/crypto- Assets**

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

### **E.24 Payment methods for crypto-asset purchase**

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

### **E.25 Value transfer methods for reimbursement**

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

### **E.26 Right of withdrawal**

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

### **E.27 Transfer of purchased crypto-assets**

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

### **E.28 Transfer time schedule**

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

### **E.29 Purchaser's technical requirements**

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

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

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

### **E.31 CASP identifier**

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

### **E.32 Placement form**

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

### **E.33 Trading platforms name**

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

### **E.34 Trading platforms Market identifier code (MIC)**

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

### **E.35 Trading platforms access**

The token is intended to be listed on the trading platform operated by Payward Global Solutions LTD ("Kraken"). Access to this platform depends on regional availability and user eligibility under

Kraken's terms and conditions. Investors should consult Kraken's official documentation to determine whether they meet the requirements for account creation and token trading.

### **E.36 Involved costs**

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

### **E.37 Offer expenses**

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

### **E.38 Conflicts of interest**

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

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

### **E.39 Applicable law**

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

### **E.40 Competent court**

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

## **Part F – Information about the crypto-assets**

### **F.1 Crypto-asset type**

The crypto-asset described in the white paper is classified as a crypto-asset under the Markets in Crypto-Assets Regulation (MiCA) but is neither classified as an electronic money token (EMT) nor an asset-referenced token (ART). It is a digital representation of value that can be stored and transferred using distributed ledger technology (DLT) or similar technology, without embodying or conferring any rights to its holder. The crypto-asset does not aim to maintain a stable value by

referencing an official currency, a basket of assets, or any other underlying rights. Instead, its valuation is entirely market-driven, based on supply and demand dynamics, and it is not subject to any stabilisation mechanism. It is neither pegged to any fiat currency nor backed by any external assets, which distinguishes it from EMTs and ARTs. Furthermore, the crypto-asset is not categorised as a financial instrument, deposit, insurance product, pension product, or any other regulated financial product under EU law. It does not grant financial rights, voting rights, or any contractual claims to its holders, and therefore remains outside the scope of regulatory frameworks applicable to traditional financial instruments.

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

The ADA token is designed to support the operation and use of the Cardano blockchain. As the native crypto-asset of the Cardano network, ADA functions as the principal on-chain unit for the transfer of value, the payment of transaction-related fees, and participation in certain protocol-level processes. ADA may be used to send and receive value between network participants without requiring a central intermediary. It is also used to pay network fees, including fees associated with standard transactions and the execution of smart contract-related operations on the Cardano blockchain. In addition, ADA is integrated directly into the Cardano ledger architecture as a native crypto-asset, meaning that its issuance, accounting and transfer are handled at protocol level rather than through a separate smart-contract based token standard.

Within the Cardano ecosystem, ADA may be used in connection with the network's proof-of-stake consensus mechanism, where holders may delegate their ADA to stake pools or otherwise participate in staking-related processes in accordance with the applicable protocol rules. Such participation is intended to contribute to the operation and security of the network, and participants may receive protocol-defined rewards in ADA. ADA may also be used in connection with certain governance-related processes within the Cardano ecosystem, including voting arrangements relating to treasury-funded initiatives, protocol development proposals, and certain other protocol-related matters, in accordance with the applicable governance framework.

The ADA token does not confer ownership, profit participation, governance rights over the issuer or any related entity, or any form of economic entitlement. All functionalities are technical in nature and relate exclusively to interactions within the Cardano protocol environment. The actual usability of ADA depends on factors such as system stability, smart-contract execution, development progress, governance decisions, and the operational conditions of the Cardano blockchain and any other distributed-ledger networks on which ADA is deployed or bridged, which are outside the control of token holders.

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

Future milestones:

- 2026 Scaling and Adoption Initiatives (2026): The Cardano Foundation communicated plans to increase its demand-generation budget in 2026 to support ecosystem-related events and adoption initiatives.
- Hydra v1.3 and Further Development (2026 onward): Ongoing work on the Hydra Layer 2 solution includes production hardening, implementation of partial fan-out for excessive UTXO handling, and further development of fast-finality features for decentralised-finance-related applications.

- Ouroboros Leios Implementation (2026 onward): Ouroboros Leios is being developed as a throughput-focused consensus upgrade for Cardano, with the objective of increasing throughput through a revised block-processing design.
- Ouroboros Peras (2026 onwards): The Cardano project has communicated ongoing development of Ouroboros Peras, an upgrade to the Ouroboros Praos consensus protocol intended to accelerate transaction settlement.
- Dijkstra Era (Planned): A further ledger era named Dijkstra is planned, with a stated focus on Plutus v4, consensus and ledger integration, and Conway-related refactors.
- Euler Era (Planned): A subsequent ledger era named Euler is planned, although its full scope has not yet been determined in the provided material.
- Long-term Governance Rollout (next three years): The roadmap indicates a continued focus on governance usability, voter participation, and further decentralisation of ecosystem integration over the coming three years.
- Ouroboros Omega (Long-term): Ouroboros Omega is described as a longer-term consensus objective intended to combine higher performance under favourable conditions with robust security guarantees, including multi-resource security concepts.

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

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

**F.4 Type of crypto-asset white paper**

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

**F.5 The type of submission**

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

**F.6 Crypto-asset characteristics**

The crypto-asset referred to herein is a crypto-asset other than EMTs and ARTs, and is available on the Cardano network. The crypto-asset is fungible up to 6 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: "Cardano ADA" 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 2026-04-22).

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

As no issuer is identified for the crypto-asset, there is no website of an issuer within the meaning of Regulation (EU) 2023/1114 (MiCA).

General, non-issuer-related information about the underlying project is made publicly available at: <https://cardano.org/>.

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

2026-06-01

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

2026-06-01

### **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**

HWGL1C2CK

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

76QS7QCXB

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

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

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

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

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

LEI eligibility cannot be assessed, as the issuer cannot be identified as a legal person.

## **F.18 Home Member State**

Germany

## **F.19 Host Member States**

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

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

## **G.1 Purchaser rights and obligations**

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

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

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

## **G.3 Conditions for modifications of rights and obligations**

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

## **G.4 Future public offers**

Information on future offers to the public of crypto-assets was not available at the time of writing this white paper (2026-04-22).

## **G.5 Issuer retained crypto-assets**

No identifiable issuer has been identified for the ADA crypto-asset for the purposes of this white paper, and the Cardano project is described as following a decentralised approach. Accordingly, no crypto-assets are attributed in this section as being retained by an identified issuer.

For completeness, publicly described information regarding the genesis distribution indicates that 5,185,414,108 ADA were allocated at launch to three founding entities, namely IOHK, EMURGO and the Cardano Foundation. This information is included solely to provide historical context to investors and should not be understood as a determination that those entities were, or are, the issuer of the ADA crypto-asset for the purposes of this white paper, nor that those amounts remain currently held by them.

## **G.6 Utility token classification**

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

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

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

## **G.8 Utility tokens redemption**

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

## **G.9 Non-trading request**

The admission to trading is sought.

## **G.10 Crypto-assets purchase or sale modalities**

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

## **G.11 Crypto-assets transfer restrictions**

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

## **G.12 Supply adjustment protocols**

No – there are no fixed protocols that can increase or decrease the supply of the crypto-asset in response to changes in demand as of 2026-04-22.

However, it is possible to decrease the circulating supply by transferring crypto-assets to addresses that are designed or understood to be provably unspendable. These are addresses from which the tokens are no longer intended to be transferred or accessed, effectively removing them from circulation.

## **G.13 Supply adjustment mechanisms**

For the crypto-asset in scope, the supply is limited to 45,000,000,000 tokens according to public information. Investors should note that changes in the supply of the crypto-asset can have a negative impact.

## **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 implemented on the Cardano network following the standards described below.

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

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

The crypto-asset in scope (ADA) is native to the Cardano Layer-1 distributed ledger. It is not natively issued on other DLT networks. Any representations of ADA on non-Cardano networks (e.g., “wrapped” or bridged forms) are third-party instruments outside the scope of this white paper and may entail additional legal, operational, and counterparty risks.

1. Consensus protocol. Cardano operates the Ouroboros family of proof-of-stake protocols. The production network uses Ouroboros Praos, under which time is divided into epochs and slots and

stake-pool operators are probabilistically selected to produce blocks. Time is divided into epochs of 432,000 one-second slots (five days). On expectation, one slot leader is elected approximately every 20 seconds. In any slot, zero or more block-producing nodes may be nominated; where multiple candidate blocks are produced, only blocks accepted by the protocol become part of the canonical chain. Security assumptions require that a majority of active stake follows protocol rules.

2. Ledger model and transactions. Cardano uses an extended UTXO (eUTXO) ledger model. Transactions consume and create UTXOs and may reference validator scripts (smart contracts) that must succeed deterministically for the transaction to be valid. Two-phase validation applies: (i) structural checks and fees; (ii) script execution. Collateral UTXOs are designated to cover node execution work if phase-2 fails; if validation succeeds, collateral is untouched.

3. Smart-contract environment. Smart contracts are immutable at deployment and execute deterministically across validating nodes. On-chain validator code can be authored in several Cardano-specific stacks (e.g., Plutus, Marlowe, Aiken, OpShin, or TypeScript-embedded approaches). Off-chain (client) code builds transactions and enforces application-level logic but does not alter on-chain determinism.

4. Staking, delegation, and rewards. ADA held on Cardano confers participation rights in consensus through staking, either by operating a stake pool or by delegating to a pool. Delegation does not restrict spending rights. Rewards are protocol-driven and sourced from fees and monetary expansion within predefined parameters. Pool performance, pledge, and saturation influence reward allocation. Protocol parameters may be updated through on-chain governance as enabled from time to time.

5. Governance. Cardano features on-chain governance under the CIP-1694 framework, under which ADA holders may participate directly or through delegated representatives (DReps) in voting on specified governance actions, including certain protocol updates and treasury-related actions, subject to the applicable constitutional and ratification framework.

### **H.3 Technology used**

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

The crypto-asset in scope (ADA) is native to the Cardano Layer-1 distributed ledger. It is not natively issued on other DLT networks. Any representations of ADA on non-Cardano networks (e.g., “wrapped” or bridged forms) are third-party instruments outside the scope of this white paper and may entail additional legal, operational, and counterparty risks.

#### **1. Decentralised Ledger**

Decentralised Ledger: The Cardano blockchain functions as a decentralised ledger recording transactions and balances in accordance with the protocol rules.

## 2. Private Key Management

Cardano uses Ed25519 key pairs for authentication and transaction signing. Holders should securely safeguard the relevant private keys and, where applicable, wallet recovery credentials used to restore access to supported wallet software.

## 3. Cryptographic Integrity

Cardano employs elliptic-curve cryptography based on Ed25519 for digital signatures and verification, and Blake2b-224 hash functions for address-related key hashes. Consensus leader election and block-production security use Verifiable Random Functions (VRFs) and Key-Evolving Signatures (KES) to support unpredictability and reduce exposure from long-term key compromise. These mechanisms, combined with the extended UTXO model and deterministic transaction validation, support the authenticity, integrity, and resistance to unauthorised alteration of Cardano transactions and blocks.

### **H.4 Consensus mechanism**

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

1. Consensus mechanism. Cardano uses the Ouroboros Praos proof-of-stake consensus protocol. Under this protocol, time is divided into epochs and one-second slots. Each epoch currently contains 432,000 slots, corresponding to a period of five days. In any slot, zero or more block-producing nodes may be nominated, and on average one node is expected to be nominated approximately every 20 seconds. Where multiple candidate blocks are produced, only blocks accepted by the protocol become part of the canonical chain.

2. Block production and stake-based selection. New blocks are produced by stake-pool operators. Slot-leader selection is probabilistic and depends on stake associated with a pool, including stake delegated to it by ADA holders. The greater the stake controlled by a pool, the greater its probability of being selected to produce a block that is accepted into the blockchain. ADA holders may either operate a stake pool themselves or delegate stake to an existing pool. Delegation does not require transfer of custody and does not impose a protocol-level lock-up preventing spending of the delegated ADA.

3. Cryptographic safeguards and security assumptions. Ouroboros Praos uses verifiable random functions (VRFs) in connection with slot-leader selection and key-evolving signatures (KES) in block-production security. These mechanisms are intended to support unpredictability in leader selection and reduce exposure from long-term key compromise. The security of the protocol is based on the assumption that a majority of active stake follows the protocol rules.

4. Finality and incentives. Cardano does not provide absolute instant finality at the protocol level; rather, transaction finality is probabilistic and increases as additional blocks are added on top of a transaction. Cardano does not generally apply slashing of delegated stake. Instead, the protocol

uses reward-based incentives under which pool performance and stake distribution affect rewards, while overly concentrated stake is subject to diminishing reward efficiency through the protocol's saturation design.

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

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

Cardano uses a proof-of-stake incentive model under which ADA holders may participate either by operating a stake pool or by delegating ADA to an existing pool without transferring custody. Staking rewards are calculated and distributed on an epoch basis. Each epoch currently lasts five days. Rewards available for distribution are funded from a combined reward pot consisting of transaction fees collected during the epoch and a protocol-defined contribution from the remaining ADA reserves through monetary expansion. A treasury cut is applied before rewards are distributed. Current Cardano documentation describes the treasury rate as 20% and the reserve contribution rate as 0.3% of remaining reserves per epoch.

The remaining reward pot is allocated among eligible stake pools and their delegators in accordance with protocol rules. Reward outcomes are influenced by factors including pool performance, pledged stake, and stake concentration. Pools may specify a fixed cost and a margin, which affect the distribution of rewards between operators and delegators. Protocol parameters also include settings intended to support decentralisation and reduce incentives for excessive stake concentration. Cardano does not generally apply punitive slashing of delegated ADA; instead, poor performance or excessive saturation may reduce the rewards available to a pool and its delegators.

Transaction fees on Cardano are deterministic and denominated in ADA. Current developer documentation describes the base transaction fee as calculated according to the formula  $fee = a \times size(tx) + b$ , where  $a$  is the cost per byte and  $b$  is a fixed base fee. Transactions involving smart-contract execution incur additional fees based on execution units, including memory units and CPU steps. Transaction fees are paid by the sender and are pooled at epoch level rather than being paid directly to the specific block-producing node that included the transaction.

For transactions involving phase-2 smart-contract validation, collateral inputs may be required. If script validation succeeds, collateral is not taken. If phase-2 validation fails, collateral may be collected to compensate for validation work already performed by nodes.

## **H.6 Use of distributed ledger technology**

No – 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.7 DLT functionality description**

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

## H.8 Audit

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

## H.9 Audit outcome

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

# Part I – Information on risks

## I.1 Offer-related risks

### 1. Regulatory and Compliance

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

### 2. Trading venue and connection risk

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

### 3. Market formation and liquidity conditions

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

**Volatility:** The market price of the crypto-asset may fluctuate significantly over short periods, including for reasons that are not linked to changes in the underlying project or protocol. Periods of

limited liquidity, shifts in overall market sentiment, or trading on only a small number of CEXs or DEXs can amplify these movements and lead to higher slippage when orders are executed. As a result, investors may be unable to sell the crypto-asset at or close to a previously observed price, even where no negative project-specific event has occurred.

#### 4. Counterparty and service provider dependence

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

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

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

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

#### 5. Operational and information risks

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

#### 6. Market access and liquidity concentration risk

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

## I.2 Issuer-related risks

Interpretative note for this section: Where no identifiable issuer exists, or where the crypto-asset project follows a decentralised structure, the risks described in this section should be read in light of that structure. References to the “issuer” do not constitute a determination that any foundation, development contributor, governance body, ecosystem participant, or other person is the issuer of the crypto-asset for the purposes of Regulation (EU) 2023/1114. Instead, the relevant risks may arise from the absence of a central responsible issuer or from the actions, omissions, financial condition, operational capacity, governance arrangements, communications, or continued involvement of persons or entities that may materially influence the development, operation, maintenance, or adoption of the crypto-asset.

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

#### 2. Market volatility risk

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

#### 3. Liquidity and price-determination risk

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

#### 4. Crypto-asset security risk

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

#### 5. Fraud and scam risk

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

## 6. Legal and regulatory reclassification risk

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

## 7. Absence of investor protection

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

## 8. Counterparty risk

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

## 9. Reputational risk

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

## 10. Community and sentiment risk

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

## 11. Macroeconomic and interest-rate risk

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

## 12. Taxation risk

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

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

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

#### 14. Market-abuse risk

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

#### 15. Legal ownership and jurisdictional risk

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

#### 16. Concentration risk

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

### **I.4 Project implementation-related risks**

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

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

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

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

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

## I.5 Technology-related risks

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

### 1. Blockchain dependency risk

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

### 2. Smart contract, script, and software-component vulnerability risk

Where the crypto-asset, related transfer functionality, or related ecosystem applications depend on smart contracts, scripts, protocol modules, wallet software, off-chain components, or other software infrastructure, those components may contain coding errors, design flaws, or security vulnerabilities. For crypto-assets that are native to the underlying ledger and are not themselves defined by a smart contract, these risks may relate instead to ledger-level scripts, staking or governance interactions, wallet implementations, transaction-building tools, decentralised applications, or other ecosystem software used to interact with the crypto-asset. Exploitation or malfunction of such components may result in failed or unintended transactions, loss of access, disruption of functionality, incorrect processing of user instructions, or loss of confidence in the crypto-asset or its ecosystem. Even where audits, formal methods, or other review processes are used, undetected vulnerabilities may persist due to the complexity of the relevant software and the difficulty of modifying deployed or widely adopted components.

### 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**

Cardano ADA

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

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

1. Consensus mechanism. Cardano uses the Ouroboros Praos proof-of-stake consensus protocol. Under this protocol, time is divided into epochs and one-second slots. Each epoch currently contains 432,000 slots, corresponding to a period of five days. In any slot, zero or more block-producing nodes may be nominated, and on average one node is expected to be nominated approximately every 20 seconds. Where multiple candidate blocks are produced, only blocks accepted by the protocol become part of the canonical chain.

2. Block production and stake-based selection. New blocks are produced by stake-pool operators. Slot-leader selection is probabilistic and depends on stake associated with a pool, including stake delegated to it by ADA holders. The greater the stake controlled by a pool, the greater its probability of being selected to produce a block that is accepted into the blockchain. ADA holders may either operate a stake pool themselves or delegate stake to an existing pool. Delegation does not require transfer of custody and does not impose a protocol-level lock-up preventing spending of the delegated ADA.

3. Cryptographic safeguards and security assumptions. Ouroboros Praos uses verifiable random functions (VRFs) in connection with slot-leader selection and key-evolving signatures (KES) in block-production security. These mechanisms are intended to support unpredictability in leader selection and reduce exposure from long-term key compromise. The security of the protocol is based on the assumption that a majority of active stake follows the protocol rules.

4. Finality and incentives. Cardano does not provide absolute instant finality at the protocol level; rather, transaction finality is probabilistic and increases as additional blocks are added on top of a transaction. Cardano does not generally apply slashing of delegated stake. Instead, the protocol uses reward-based incentives under which pool performance and stake distribution affect rewards, while overly concentrated stake is subject to diminishing reward efficiency through the protocol's saturation design.

## S.5 Incentive Mechanisms and Applicable Fees

The crypto-asset in scope is implemented on the Cardano network following the standards described below.

The following applies to Cardano:

Cardano uses a proof-of-stake incentive model under which ADA holders may participate either by operating a stake pool or by delegating ADA to an existing pool without transferring custody. Staking rewards are calculated and distributed on an epoch basis. Each epoch currently lasts five days. Rewards available for distribution are funded from a combined reward pot consisting of transaction fees collected during the epoch and a protocol-defined contribution from the remaining ADA reserves through monetary expansion. A treasury cut is applied before rewards are distributed. Current Cardano documentation describes the treasury rate as 20% and the reserve contribution rate as 0.3% of remaining reserves per epoch.

The remaining reward pot is allocated among eligible stake pools and their delegators in accordance with protocol rules. Reward outcomes are influenced by factors including pool performance, pledged stake, and stake concentration. Pools may specify a fixed cost and a margin, which affect the distribution of rewards between operators and delegators. Protocol parameters also include settings intended to support decentralisation and reduce incentives for excessive stake concentration. Cardano does not generally apply punitive slashing of delegated ADA; instead, poor performance or excessive saturation may reduce the rewards available to a pool and its delegators.

Transaction fees on Cardano are deterministic and denominated in ADA. Current developer documentation describes the base transaction fee as calculated according to the formula  $fee = a \times size(tx) + b$ , where  $a$  is the cost per byte and  $b$  is a fixed base fee. Transactions involving smart-contract execution incur additional fees based on execution units, including memory units and CPU steps. Transaction fees are paid by the sender and are pooled at epoch level rather than being paid directly to the specific block-producing node that included the transaction.

For transactions involving phase-2 smart-contract validation, collateral inputs may be required. If script validation succeeds, collateral is not taken. If phase-2 validation fails, collateral may be collected to compensate for validation work already performed by nodes.

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

2025-04-15

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

2026-04-15

## **S.8 Energy consumption**

773946.00000 kWh/a

## **S.9 Energy consumption sources and methodologies**

For the calculation of energy consumption, the so-called 'bottom-up' approach is being used. The nodes are considered to be the central factor for the energy consumption of the network. These assumptions are made on the basis of empirical findings through the use of 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 client software. The energy consumption of the hardware devices was measured in certified test laboratories. When calculating the energy consumption, we used - if available - the Functionally Fungible Group Digital Token Identifier (FFG DTI) to determine all implementations of the asset in question that are in scope and we update the mappings regularly, based on data of the Digital Token Identifier Foundation. The information regarding the hardware used and the number of participants in the network is based on assumptions that are verified with best effort using empirical data. In general, participants are assumed to be largely economically rational. As a precautionary principle, we make assumptions on the conservative side when in doubt, i.e. making higher estimates for the adverse impacts.

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

37.4187578605 %

## **S.11 Energy intensity**

0.00109 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**

260.63169 tCO<sub>2</sub>e/a

## **S.14 GHG intensity**

0.00037 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 to be determined using public information sites, open-source crawlers and crawlers developed in-house. If no information is available on the geographic distribution of the nodes, reference networks are used which are comparable in terms of their incentivisation structure and consensus mechanism.

This geo-information is merged with public information from Our World in Data, see citation. The intensity is calculated as the marginal energy cost wrt. one more 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]. Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy" [original data]. Retrieved from <https://ourworldindata.org/grapher/share-electricity-renewables>.

## **S.16 Key GHG sources and methodologies**

To determine the GHG emissions, the locations of the nodes are to be determined using public information sites, open-source crawlers and crawlers developed in-house. If no information is available on the geographic distribution of the nodes, reference networks are used which are comparable in terms of their incentivisation structure and consensus mechanism. This geo-information is merged with public information from Our World in Data, see citation. The intensity is calculated as the marginal emission wrt. one more 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]. Ember, "Yearly Electricity Data Europe"; Ember, "Yearly Electricity Data"; Energy Institute, "Statistical Review of World Energy" [original data]. Retrieved from <https://ourworldindata.org/grapher/carbon-intensity-electricity> licensed under CC BY 4.0.

