

# MiCA White Paper

## Cardano (ADA)

Version 1.1  
April 2025

White Paper in accordance with Markets in Crypto Assets Regulation (MiCAR)  
for the European Economic Area (EEA).

Purpose: seeking admission to trading in EEA.

Prepared and Filed by LCX.com

NOTE: THIS CRYPTO-ASSET WHITE PAPER HAS NOT BEEN APPROVED BY ANY COMPETENT AUTHORITY IN ANY MEMBER STATE OF THE EUROPEAN ECONOMIC AREA. THE PERSON SEEKING ADMISSION TO TRADING IS SOLELY RESPONSIBLE FOR THE CONTENT OF THIS CRYPTO-ASSET WHITE PAPER ACCORDING TO THE EUROPEAN ECONOMIC AREA'S MARKETS IN CRYPTO-ASSET REGULATION (MICA).

This white paper has been prepared in accordance with the requirements set forth in Commission Implementing Regulation (EU) 2024/2984, ensuring that all relevant reporting formats, content specifications, and machine-readable structures outlined in Annex I of this regulation have been fully mapped and implemented, particularly reflected through the Recitals, to enable proper notification under the Markets in Crypto-Assets Regulation (MiCAR).

### Copyright:

This White Paper is under **copyright** of LCX AG Liechtenstein and may not be used, copied, or published by any third party without explicit written permission from LCX AG.

## 00 TABLE OF CONTENT

<b>COMPLIANCE STATEMENTS</b>	<b>6</b>
<b>SUMMARY</b>	<b>7</b>
<b>A. PART A - INFORMATION ABOUT THE OFFEROR OR THE PERSON SEEKING ADMISSION TO TRADING</b>	<b>9</b>
A.1 Name	9
A.2 Legal Form	9
A.3 Registered Address	9
A.4 Head Office	9
A.5 Registration Date	9
A.6 Legal Entity Identifier	9
A.7 Another Identifier Required Pursuant to Applicable National Law	9
A.8 Contact Telephone Number	9
A.9 E-mail Address	9
A.10 Response Time (Days)	9
A.11 Parent Company	9
A.12 Members of the Management Body	9
A.13 Business Activity	9
A.14 Parent Company Business Activity	10
A.15 Newly Established	10
A.16 Financial Condition for the past three Years	10
A.17 Financial Condition Since Registration	10
<b>B. PART B - INFORMATION ABOUT THE ISSUER, IF DIFFERENT FROM THE OFFEROR OR PERSON SEEKING ADMISSION TO TRADING</b>	<b>11</b>
B.1 Issuer different from offeror or person seeking admission to trading	11
B.2 Name	11
B.3 Legal Form	11
B.4 Registered Address	11
B.5 Head Office	11
B.6 Registration Date	11
B.7 Legal Entity Identifier	11
B.8 Another Identifier Required Pursuant to Applicable National Law	11
B.9 Parent Company	11
B.10 Members of the Management Body	11
B.11 Business Activity	11
B.12 Parent Company Business Activity	11
<b>C. 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</b>	<b>12</b>
C.1 Name	12
C.2 Legal Form	12
C.3 Registered Address	12
C.4 Head Office	12
C.5 Registration Date	12

C.6 Legal Entity Identifier	12
C.7 Another Identifier Required Pursuant to Applicable National Law	12
C.8 Parent Company	12
C.9 Reason for Crypto-Asset White Paper Preparation	12
C.10 Members of the Management Body	12
C.11 Operator Business Activity	12
C.12 Parent Company Business Activity	13
C.13 Other persons drawing up the white paper under Article 6 (1) second subparagraph MiCA	13
C.14 Reason for drawing up the white paper under Article 6 (1) second subparagraph MiCA	13
<b>D. PART D - INFORMATION ABOUT THE CRYPTO-ASSET PROJECT</b>	<b>14</b>
D.1 Crypto-Asset Project Name	14
D.2 Crypto-Assets Name	14
D.3 Abbreviation	14
D.4 Crypto-Asset Project Description	14
D.5 Details of all persons involved in the implementation of the crypto-asset project	14
D.6 Utility Token Classification	14
D.7 Key Features of Goods/Services for Utility Token Projects	14
D.8 Plans for the Token	14
D.9 Resource Allocation	15
D.10 Planned Use of Collected Funds or Crypto-Assets	15
<b>E. PART E - INFORMATION ABOUT THE OFFER TO THE PUBLIC OF CRYPTO-ASSETS OR THEIR ADMISSION TO TRADING</b>	<b>16</b>
E.1 Public Offering or Admission to Trading	16
E.2 Reasons for Public Offer or Admission to Trading	16
E.3 Fundraising Target	16
E.4 Minimum Subscription Goals	16
E.5 Maximum Subscription Goal	16
E.6 Oversubscription Acceptance	16
E.7 Oversubscription Allocation	16
E.8 Issue Price	16
E.9 Official Currency or Any Other Crypto-Assets Determining the Issue Price	16
E.10 Subscription Fee	16
E.11 Offer Price Determination Method	16
E.12 Total Number of Offered/Traded Crypto-Assets	16
E.13 Targeted Holders	16
E.14 Holder Restrictions	17
E.15 Reimbursement Notice	17
E.16 Refund Mechanism	17
E.17 Refund Timeline	17
E.18 Offer Phases	17
E.19 Early Purchase Discount	17
E.20 Time-Limited Offer	17
E.21 Subscription Period Beginning	17
E.22 Subscription Period End	17
E.23 Safeguarding Arrangements for Offered Funds/Crypto-Assets	17
E.24 Payment Methods for Crypto-Asset Purchase	17
E.25 Value Transfer Methods for Reimbursement	17

E.26 Right of Withdrawal	17
E.27 Transfer of Purchased Crypto-Assets	17
E.28 Transfer Time Schedule	17
E.29 Purchaser's Technical Requirements	17
E.30 Crypto-asset service provider (CASP) name	17
E.31 CASP identifier	17
E.32 Placement Form	17
E.33 Trading Platforms name	18
E.34 Trading Platforms Market Identifier Code (MIC)	18
E.35 Trading Platforms Access	18
E.36 Involved Costs	18
E.37 Offer Expenses	18
E.38 Conflicts of Interest	18
E.39 Applicable Law	18
E.40 Competent Court	18
<b>F. PART F - INFORMATION ABOUT THE CRYPTO-ASSETS</b>	<b>19</b>
F.1 Crypto-Asset Type	19
F.2 Crypto-Asset Functionality	19
F.3 Planned Application of Functionalities	19
F.4 Type of white paper	19
F.5 The type of submission	19
F.6 Crypto-Asset Characteristics	19
F.7 Commercial name or trading name	19
F.8 Website of the issuer	19
F.9 Starting date of offer to the public or admission to trading	19
F.10 Publication date	19
F.11 Any other services provided by the issuer	19
F.12 Language or languages of the white paper	19
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, where available	19
F.14 Functionally Fungible Group Digital Token Identifier, where available	20
F.15 Voluntary data flag	20
F.16 Personal data flag	20
F.17 LEI eligibility	20
F.18 Home Member State	20
F.19 Host Member State	20
<b>G. PART G - INFORMATION ON THE RIGHTS AND OBLIGATIONS ATTACHED TO THE CRYPTO-ASSETS</b>	<b>21</b>
G.1 Purchaser Rights and Obligations	21
G.2 Exercise of Rights and Obligation	21
G.3 Conditions for Modifications of Rights and Obligations	21
G.4 Future Public Offers	21
G.5 Issuer Retained Crypto-Assets	21
G.6 Utility Token Classification	21
G.7 Key Features of Goods/Services of Utility Tokens	21
G.8 Utility Tokens Redemption	21
G.9 Non-Trading Request	21

G.10 Crypto-Assets Purchase or Sale Modalities	21
G.11 Crypto-Assets Transfer Restrictions	21
G.12 Supply Adjustment Protocols	21
G.13 Supply Adjustment Mechanisms	21
G.14 Token Value Protection Schemes	21
G.15 Token Value Protection Schemes Description	22
G.16 Compensation Schemes	22
G.17 Compensation Schemes Description	22
G.18 Applicable Law	22
G.19 Competent Court	22
<b>H. PART H – INFORMATION ON THE UNDERLYING TECHNOLOGY</b>	<b>22</b>
H.1 Distributed ledger technology	22
H.2 Protocols and Technical Standards	23
H.3 Technology Used	23
H.4 Consensus Mechanism	24
H.5 Incentive Mechanisms and Applicable Fees	24
H.6 Use of Distributed Ledger Technology	24
H.7 DLT Functionality Description	24
H.8 Audit	25
H.9 Audit Outcome	25
<b>I. PART I – INFORMATION ON RISKS</b>	<b>26</b>
I.1 Offer-Related Risks	26
I.2 Issuer-Related Risks	26
I.3 Crypto-Assets-Related Risks	26
I.4 Project Implementation-Related Risks	27
I.5 Technology-Related Risks	27
I.6 Mitigation Measures	28
<b>J. PART J – INFORMATION ON THE SUSTAINABILITY INDICATORS IN RELATION TO ADVERSE IMPACT ON THE CLIMATE AND OTHER ENVIRONMENT-RELATED ADVERSE IMPACTS</b>	<b>29</b>
J.1 Mandatory information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism	29
J.2 Supplementary information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism	31

**01 DATE OF NOTIFICATION**

2025-03-13

**COMPLIANCE STATEMENTS**

- 02 This crypto-asset white paper has not been approved by any competent authority in any Member State of the European Economic Area. The offeror of the crypto-asset is solely responsible for the content of this crypto-asset white paper.

Where relevant in accordance with Article 6(3), second subparagraph of Regulation (EU) 2023/1114, reference shall be made to 'person seeking admission to trading' or to 'operator of the trading platform' instead of 'offeror'.

- 03 This crypto-asset white paper complies with Title II of Regulation (EU) 2023/1114 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 The crypto-asset referred to in this white paper may lose its value in part or in full, may not always be transferable and may not be liquid.
- 05 Not Applicable
- 06 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. The crypto-asset referred to in this white paper is not covered by the deposit guarantee schemes under Directive 2014/49/EU of the European Parliament and of the Council.

## SUMMARY

### 07 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 (36) or any other offer document pursuant to Union or national law.

### 08 Characteristics of the crypto-asset

Cardano is a decentralized blockchain platform designed for secure and scalable smart contracts and decentralized applications (dApps), with its native cryptocurrency, ADA, used for transactions, staking, and governance. ADA can be freely bought, sold, and transferred, and holders can stake it to secure the network and earn rewards. Governance participation allows ADA holders to vote on protocol updates. Staking and governance require a compatible wallet, and transactions involve network fees. Any modifications to staking rewards or governance mechanisms are determined through decentralized governance, ensuring that ownership and transferability remain intact. Since ADA is not a utility token, it does not provide access to specific goods or services, and there are no transfer restrictions beyond network rules.

09 Not applicable

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

Cardano (ADA) is the native cryptocurrency of the Cardano blockchain, a decentralized platform designed for secure and scalable smart contracts and decentralized applications (dApps). ADA is primarily used for transactions, staking, and governance within the network. ADA is freely transferable and can be bought, sold, and traded on various regulated and unregulated cryptocurrency exchanges. There is no guarantee of liquidity, and market conditions may affect its availability and price. ADA holders can participate in network staking to secure the blockchain and earn rewards, as well as engage in decentralized governance by voting on protocol changes. The issuance and supply of ADA are governed by the Cardano protocol, with a fixed maximum supply of 45 billion ADA. No additional issuance beyond this cap is possible. Any modifications to staking rewards, governance mechanisms, or other network parameters are subject to decentralized governance and technical upgrades approved by the community.

Cardano does not offer any legal claim, financial return, or entitlement to specific goods or services. Since ADA is not classified as a utility token, there are no restrictions on its transferability apart from network security and compliance with regulatory requirements where applicable.

<i>Total offer amount</i>	Not applicable
<i>Total number of tokens to be offered to the public</i>	Not applicable
<i>Subscription period</i>	Not applicable
<i>Minimum and maximum subscription amount</i>	Not applicable
<i>Issue price</i>	Not applicable

<i>Subscription fees (if any)</i>	Not applicable
<i>Target holders of tokens</i>	Not applicable
<i>Description of offer phases</i>	Not applicable
<i>CASP responsible for placing the token (if any)</i>	Not applicable
<i>Form of placement</i>	Not applicable
<i>Admission to trading</i>	LCX AG, Herrengasse 6, 9490 Vaduz, Liechtenstein

## **A. PART A - INFORMATION ABOUT THE OFFEROR OR THE PERSON SEEKING ADMISSION TO TRADING**

### **A.1 Name**

LCX

### **A.2 Legal Form**

AG

### **A.3 Registered Address**

Herrengasse 6, 9490 Vaduz, Liechtenstein

### **A.4 Head Office**

Herrengasse 6, 9490 Vaduz, Liechtenstein

### **A.5 Registration Date**

24.04.2018

### **A.6 Legal Entity Identifier**

529900SN07Z6RTX8R418

### **A.7 Another Identifier Required Pursuant to Applicable National Law**

FL-0002.580.678-2

### **A.8 Contact Telephone Number**

+423 235 40 15

### **A.9 E-mail Address**

legal@lcx.com

### **A.10 Response Time (Days)**

020

### **A.11 Parent Company**

Not applicable

### **A.12 Members of the Management Body**

Full Name	Business Address	Function
Monty C. M. Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	President of the Board
Katarina Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	Board Member
Anurag Verma	Herrengasse 6, 9490 Vaduz, Liechtenstein	Director of Technology

### **A.13 Business Activity**

LCX provides various crypto-asset services under Liechtenstein's Token and Trusted Technology Service Provider Act ("Token- und Vertrauenswürdige Technologie-Dienstleister-Gesetz" in short "TVTG") also known as the Blockchain Act. These include custody and administration of crypto-assets, offering secure storage for clients' assets and private keys. LCX operates a trading platform, facilitating the matching of buy and sell orders for crypto-assets. It enables both crypto-to-fiat and crypto-to-crypto exchanges, ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

Under MiCA, LCX is classified as a Crypto-Asset Service Provider (CASP). LCX is not yet formally supervised under MiCA until the license is granted by the competent authority.

Under the TVTG framework, LCX provides:

- TT Depository – Custody and safekeeping of crypto-assets.
- TT Trading Platform Operator – Operation of a regulated crypto-asset exchange.
- TT Exchange Service Provider – Crypto-to-fiat and crypto-to-crypto exchange.
- Token Issuer – Marketing and distribution of tokens.
- TT Transfer Service Provider – Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider – Creation and issuance of tokens.
- Physical Validator – Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider – Legal capacity verification and identity registration.
- TT Price Service Provider – Providing aggregated crypto-asset price information.

#### **A.14 Parent Company Business Activity**

Not applicable

#### **A.15 Newly Established**

false

#### **A.16 Financial Condition for the past three Years**

LCX AG has a strong capital base, with CHF 1 million (approx. 1,126,000 USD) in share capital (Stammkapital) and a solid equity position (Eigenkapital) in 2023. The company has experienced fluctuations in financial performance over the past three years, reflecting the dynamic nature of the crypto market. While LCX AG recorded a loss in 2022, primarily due to a market downturn and a security breach, it successfully covered the impact through reserves. The company has remained financially stable, achieving revenues and profits in 2021, 2023 and 2024 while maintaining break-even operations.

In 2023 and 2024, LCX AG strengthened its operational efficiency, expanded its business activities, and upheld a stable financial position. Looking ahead to 2025, the company anticipates positive financial development, supported by market uptrends, an inflow of customer funds, and strong business performance. Increased adoption of digital assets and service expansion are expected to drive higher revenues and profitability, further reinforcing LCX AG's financial position.

#### **A.17 Financial Condition Since Registration**

LCX AG has been financially stable since its registration, supported by CHF 1 million in share capital (Stammkapital) and continuous business growth. Since its inception, the company has expanded its operations, secured multiple regulatory registrations, and established itself as a key player in the crypto and blockchain industry.

While market conditions have fluctuated, LCX AG has maintained strong revenues and break-even operations. The company has consistently reinvested in its platform, technology, and regulatory compliance, ensuring long-term sustainability. The LCX Token has been a fundamental part of the ecosystem, with a market capitalization of approximately \$200 million USD and an all-time high exceeding \$500 million USD in 2022. Looking ahead, LCX AG anticipates continued financial growth, driven by market uptrends, increased adoption of digital assets, and expanding business activities.

**B. PART B - INFORMATION ABOUT THE ISSUER, IF DIFFERENT FROM THE OFFEROR OR PERSON SEEKING ADMISSION TO TRADING<sup>1</sup>**

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

True

**B.2 Name**

Cardano Foundation

**B.3 Legal Form**

Foundation (Under Swiss law)

**B.4 Registered Address**

Dammstrasse 16 6300 Zug Switzerland

**B.5 Head Office**

Dammstrasse 16, 6300 Zug, Switzerland

**B.6 Registration Date**

Not applicable

**B.7 Legal Entity Identifier**

Not applicable

**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**

Not applicable

**B.11 Business Activity**

Not applicable

**B.12 Parent Company Business Activity**

Not applicable

---

<sup>1</sup> [19-04-2025] All information available in the public domain regarding the issuer has been added in Part- B

**C. 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**

LCX AG

**C.2 Legal Form**

AG

**C.3 Registered Address**

Herrengasse 6, 9490 Vaduz, Liechtenstein

**C.4 Head Office**

Herrengasse 6, 9490 Vaduz, Liechtenstein

**C.5 Registration Date**

24.04.2018

**C.6 Legal Entity Identifier**

529900SN07Z6RTX8R418

**C.7 Another Identifier Required Pursuant to Applicable National Law**

FL-0002.580.678-2

**C.8 Parent Company**

Not Applicable

**C.9 Reason for Crypto-Asset White Paper Preparation**

LCX is voluntarily preparing this MiCA-aligned whitepaper for Cardano (ADA) to enhance transparency, regulatory clarity, and investor confidence. LCX is providing this document as part of its commitment to regulatory best practices and transparency. This white paper serves to provide clear, standardized information about ADA for users and investors, even though it is not a MiCA requirement.

**C.10 Members of the Management Body**

Full Name	Business Address	Function
Monty C. M. Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	President of the Board
Katarina Metzger	Herrengasse 6, 9490 Vaduz, Liechtenstein	Board Member
Anurag Verma	Herrengasse 6, 9490 Vaduz, Liechtenstein	Director of Technology

**C.11 Operator Business Activity**

LCX provides various crypto-asset services under Liechtenstein's Token and Trusted Technology Service Provider Act ("Token- und Vertrauenswürdige Technologie-Dienstleister-Gesetz" in short "TVTG") also known as the Blockchain Act. These include custody and administration of crypto-assets, offering secure storage for clients' assets and private keys. LCX operates a trading platform, facilitating the matching of buy and sell orders for crypto-assets. It enables both

crypto-to-fiat and crypto-to-crypto exchanges, ensuring compliance with AML and KYC regulations. LCX also supports token placements, marketing crypto-assets on behalf of offerors.

Under MiCA, LCX is classified as a Crypto-Asset Service Provider (CASP). LCX is not yet formally supervised under MiCA until the license is granted by the competent authority.

Under the TVTG framework, LCX provides:

- TT Depository – Custody and safekeeping of crypto-assets.
- TT Trading Platform Operator – Operation of a regulated crypto-asset exchange.
- TT Exchange Service Provider – Crypto-to-fiat and crypto-to-crypto exchange.
- Token Issuer – Marketing and distribution of tokens.
- TT Transfer Service Provider – Crypto-asset transfers between ledger addresses.
- Token Generator & Tokenization Service Provider – Creation and issuance of tokens.
- Physical Validator – Enforcement of token-based rights on TT systems.
- TT Verification & Identity Service Provider – Legal capacity verification and identity registration.
- TT Price Service Provider – Providing aggregated crypto-asset price information.

**C.12 Parent Company Business Activity**

Not Applicable

**C.13 Other persons drawing up the white paper under Article 6 (1) second subparagraph MiCA**

Not Applicable

**C.14 Reason for drawing up the white paper under Article 6 (1) second subparagraph MiCA**

Not Applicable

## D. PART D - INFORMATION ABOUT THE CRYPTO-ASSET PROJECT

### D.1 Crypto-Asset Project Name

Cardano

### D.2 Crypto-Assets Name

ADA

### D.3 Abbreviation

ADA

### D.4 Crypto-Asset Project Description

Cardano is a decentralized, open-source blockchain designed for secure and scalable smart contracts, dApps, and financial transactions. It uses the Ouroboros proof-of-stake (PoS) consensus for enhanced security and energy efficiency. Built with a layered architecture, it separates settlement and computation layers for flexibility. Its native cryptocurrency, ADA, is used for transactions, staking, and governance, allowing holders to earn rewards and participate in network decisions. Cardano's development is led by IOHK, the Cardano Foundation, and Emurgo, with governance mechanisms enabling community-driven protocol updates. The total supply is capped at 45 billion ADA, ensuring controlled issuance and long-term sustainability..

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

These entities collaborate to maintain and improve the Cardano ecosystem, with governance mechanisms allowing ADA holders to participate in decision-making for future upgrades and network modifications.

Full Name	Business Address	Function
<i>Charles Hoskinson</i>	<i>Not applicable</i>	<i>Co-founder &amp; Early Developer</i>
<i>IOHK (Input Output Global, Inc.)</i>	<i>Global</i>	<i>Development &amp; Ecosystem Support</i>
<i>Cardano Foundation</i>	<i>Cardano Stiftung Dammstrasse 16 6300 Zug Switzerland</i>	<i>Growth, Adoption, &amp; Regulatory Compliance</i>
<i>Emurgo</i>	<i>Global</i>	<i>Development, Ecosystem Support and businesses Integrating</i>

### D.6 Utility Token Classification

false

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

Not applicable

**D.8 Plans for the Token**

Not applicable

**D.9 Resource Allocation**

Not applicable

**D.10 Planned Use of Collected Funds or Crypto-Assets**

Not applicable

## **E. 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**

ATTR

### **E.2 Reasons for Public Offer or Admission to Trading**

LCX is voluntarily filing a MiCA-compliant whitepaper for Cardano(ADA) to enhance transparency, regulatory clarity, and investor confidence. By doing so, LCX strengthens its position as a regulated exchange, ensuring a trustworthy and transparent trading environment for Cardano within the EU's evolving regulatory framework. Additionally, this filing facilitates market access and institutional adoption by removing uncertainty for institutional investors and regulated entities seeking to engage with Cardano in a compliant manner. It further supports the broader market adoption and integration of Cardano into the regulated financial ecosystem, reinforcing LCX's role in shaping compliant and transparent crypto markets.

### **E.3 Fundraising Target**

Not applicable

### **E.4 Minimum Subscription Goals**

Not applicable

### **E.5 Maximum Subscription Goal**

Not applicable

### **E.6 Oversubscription Acceptance**

Not applicable

### **E.7 Oversubscription Allocation**

Not applicable

### **E.8 Issue Price**

Not applicable

### **E.9 Official Currency or Any Other Crypto-Assets Determining the Issue Price**

Not applicable

### **E.10 Subscription Fee**

Not applicable

### **E.11 Offer Price Determination Method**

Not applicable

### **E.12 Total Number of Offered/Traded Crypto-Assets**

Cardano (ADA) has a fixed maximum supply of 45 billion ADA. As of now, a significant portion of this supply is already in circulation and actively traded on various cryptocurrency exchanges. No additional ADA can be issued beyond this cap, as defined by the protocol. The remaining ADA is gradually released into circulation through staking rewards and ecosystem incentives.

### **E.13 Targeted Holders**

ALL

### **E.14 Holder Restrictions**

Not applicable

### **E.15 Reimbursement Notice**

Not applicable

- E.16 Refund Mechanism**  
Not applicable
- E.17 Refund Timeline**  
Not applicable
- E.18 Offer Phases**  
Not applicable
- E.19 Early Purchase Discount**  
Not applicable
- E.20 Time-Limited Offer**  
Not applicable
- E.21 Subscription Period Beginning**  
Not applicable
- E.22 Subscription Period End**  
Not applicable
- E.23 Safeguarding Arrangements for Offered Funds/Crypto-Assets**  
Not applicable
- E.24 Payment Methods for Crypto-Asset Purchase**  
Not applicable
- E.25 Value Transfer Methods for Reimbursement**  
Not applicable
- E.26 Right of Withdrawal**  
Not applicable
- E.27 Transfer of Purchased Crypto-Assets**  
Not applicable
- E.28 Transfer Time Schedule**  
Not applicable
- E.29 Purchaser's Technical Requirements**  
Not applicable
- E.30 Crypto-asset service provider (CASP) name**  
Not applicable
- E.31 CASP identifier**  
Not applicable
- E.32 Placement Form**  
NTAV
- E.33 Trading Platforms name**  
LCX AG
- E.34 Trading Platforms Market Identifier Code (MIC)**  
LCXE

### **E.35 Trading Platforms Access**

Cardano (ADA) is widely traded on multiple regulated and unregulated trading platforms globally. As a decentralized crypto-asset with no central issuer, ADA is not restricted to a single exchange and can be accessed by retail and institutional investors worldwide.

LCX Exchange also provides access to Cardano (ADA) trading with several pairs. Investors can access Cardano(\$ADA) through [LCX.com](https://www.lcx.com), the official LCX exchange, as well as other supported cryptocurrency trading platforms. To trade \$ADA, users must register, complete KYC (Know Your Customer) verification, and comply with platform-specific requirements.

### **E.36 Involved Costs**

Not applicable

### **E.37 Offer Expenses**

Not applicable

### **E.38 Conflicts of Interest**

Not applicable

### **E.39 Applicable Law**

Not applicable - Cardano (ADA) operates as a decentralized blockchain network without a single issuing entity, making it subject to the regulatory frameworks of the jurisdictions where it is traded or utilized. The applicable laws governing ADA transactions, trading, and compliance depend on the regulations of each country.

### **E.40 Competent Court**

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations.

## **F. PART F - INFORMATION ABOUT THE CRYPTO-ASSETS**

### **F.1 Crypto-Asset Type**

Other Crypto-Asset

### **F.2 Crypto-Asset Functionality**

ADA is used for transaction fees, staking to secure the network, and participation in decentralized governance. Holders can delegate ADA to stake pools to earn rewards and vote on protocol decisions.

For clarity, while ADA serves as a transaction, staking, and governance token, these functions do not meet the MiCAR criteria for a "Utility Token" under Article 3(1)(11). ADA does not grant access to a good or service offered by an issuer or service provider, and therefore is appropriately classified as an "Other Crypto-Asset" under MiCAR Article 4(1)(6).

### **F.3 Planned Application of Functionalities**

All functionalities of ADA, including staking, governance, and transactions, are fully operational on the Cardano mainnet and actively used.

### **F.4 Type of white paper**

OTHR

### **F.5 The type of submission**

NEWT

### **F.6 Crypto-Asset Characteristics**

ADA is a decentralized, open-source digital asset with a fixed supply of 45 billion ADA. It operates on the Cardano blockchain, utilizing the Ouroboros proof-of-stake consensus mechanism for security and scalability. ADA enables secure peer-to-peer transactions, network validation through staking, and decentralized governance participation. The functionalities are already active, and ADA is freely tradable on multiple cryptocurrency exchanges. The ISO 24165 Digital Token Identifier (DTI) for ADA can be retrieved from recognized digital asset registries for compliance classification.

### **F.7 Commercial name or trading name**

ADA

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

Not applicable

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

2025-04-14

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

2025-04-13

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

Not applicable

### **F.12 Language or languages of the white paper**

English

### **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, where available**

HWGL1C2CK

**F.14 Functionally Fungible Group Digital Token Identifier, where available**

Not applicable

**F.15 Voluntary data flag**

true

**F.16 Personal data flag**

false

**F.17 LEI eligibility**

false

**F.18 Home Member State**

Liechtenstein

**F.19 Host Member States**

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

## **G. PART G - INFORMATION ON THE RIGHTS AND OBLIGATIONS ATTACHED TO THE CRYPTO-ASSETS**

### **G.1 Purchaser Rights and Obligations**

Purchasers of ADA do not acquire contractual rights or obligations from an issuer, as Cardano is a decentralized, open-source blockchain without a central governing entity. Ownership of ADA grants the right to store, transfer, stake, and use it within the network, subject to its consensus rules and cryptographic security mechanisms. Users are responsible for managing their private keys and complying with applicable laws and regulations.

### **G.2 Exercise of Rights and Obligation**

Since Cardano operates as a decentralized, permissionless network, there are no contractual rights or obligations to exercise. ADA usage, staking, and transactions are governed by Cardano's consensus rules and executed through the blockchain protocol. Users control their ADA holdings via private key management and can stake or transfer ADA freely within the network, subject to network fees and block confirmation times. Compliance with relevant laws remains the user's responsibility.

### **G.3 Conditions for Modifications of Rights and Obligations**

Cardano's protocol and functionalities are determined by decentralized governance and cannot be unilaterally modified by any single entity. Network upgrades or modifications require community consensus through governance mechanisms, including input from developers, stake pool operators, and ADA holders, typically implemented via Cardano Improvement Proposals (CIPs). However, legal and regulatory obligations may change based on jurisdiction, and users must ensure compliance with relevant laws.

### **G.4 Future Public Offers**

Not applicable

### **G.5 Issuer Retained Crypto-Assets**

Not applicable

### **G.6 Utility Token Classification**

No

### **G.7 Key Features of Goods/Services of Utility Tokens**

Not applicable

### **G.8 Utility Tokens Redemption**

Not applicable

### **G.9 Non-Trading Request**

True

### **G.10 Crypto-Assets Purchase or Sale Modalities**

Not applicable

### **G.11 Crypto-Assets Transfer Restrictions**

Not applicable

### **G.12 Supply Adjustment Protocols<sup>2</sup>**

Cardano does **not** have dynamic supply adjustment protocols that respond to market demand. The total supply is fixed and predefined.

### **G.13 Supply Adjustment Mechanisms**

Not applicable

---

<sup>2</sup> [19-04-2025] An explanation regarding the Supply Adjustment Protocol is provided in Sub-Part G.12.

**G.14 Token Value Protection Schemes**

False

**G.15 Token Value Protection Schemes Description**

Not Applicable

**G.16 Compensation Schemes**

False

**G.17 Compensation Schemes Description**

Not Applicable

**G.18 Applicable Law**

Cardano (ADA) operates as a decentralized, open-source blockchain with no central issuing entity, making it subject to the regulatory frameworks of the jurisdictions where it is traded or utilized. The applicable laws governing ADA transactions, trading, and compliance depend on the legal requirements of each country, including the EU Markets in Crypto-Assets Regulation (MiCA), anti-money laundering (AML) laws, and securities regulations, where applicable.

**G.19 Competent Court**

Not applicable - As Cardano (ADA) is a decentralized, open-source crypto-asset with no central issuer or governing entity, it does not fall under the jurisdiction of any specific legal framework.

In case of disputes related to services provided by LCX, the competent court is: The Courts of Liechtenstein, with jurisdiction in accordance with Liechtenstein law and applicable EU regulations.

## **H. PART H – INFORMATION ON THE UNDERLYING TECHNOLOGY**

### **H.1 Distributed ledger technology**

Cardano is a third-generation blockchain designed for scalability, security, and sustainability, utilizing decentralized distributed ledger technology (DLT). Unlike first-generation blockchains like Bitcoin, which rely on energy-intensive Proof-of-Work (PoW), or Ethereum, which transitioned from PoW to Proof-of-Stake (PoS), Cardano was built from the ground up with a highly efficient PoS consensus mechanism called Ouroboros.

Ouroboros is the first peer-reviewed and mathematically verified PoS protocol, selecting validators based on the amount of ADA staked rather than computational power. This approach significantly reduces energy consumption while maintaining strong security and decentralization. Cardano's blockchain architecture is divided into two layers: the Cardano Settlement Layer (CSL), which handles ADA transactions, and the Cardano Computation Layer (CCL), which supports smart contracts and decentralized applications (dApps). This separation enhances efficiency, security, and flexibility for developers.

Smart contracts on Cardano are powered by Plutus, a Haskell-based functional programming language, and Marlowe, a domain-specific language designed for financial contracts. These technologies improve security and reliability, ensuring precise and verifiable execution of smart contracts. The network is designed for long-term scalability, with future updates like Hydra aiming to increase transaction throughput. Cardano also focuses on interoperability, enabling connections with other blockchains and traditional financial systems, while its treasury system ensures sustainable ecosystem development. Governance is decentralized, allowing ADA holders to vote on protocol upgrades through Project Catalyst.

By combining rigorous scientific research with decentralized governance, Cardano provides a secure, scalable, and sustainable blockchain ecosystem suitable for financial applications, enterprise solutions, and decentralized finance (DeFi).

### **H.2 Protocols and Technical Standards**

Cardano operates on a third-generation blockchain protocol designed to enhance scalability, security, and sustainability while maintaining full decentralization. The network is built on a Proof-of-Stake (PoS) consensus mechanism called Ouroboros, which ensures efficient transaction validation without the high energy consumption associated with Proof-of-Work (PoW) systems. Unlike traditional blockchains that require miners to compete for block production, Ouroboros selects validators (stake pool operators) based on the amount of ADA staked, ensuring a fair and energy-efficient consensus process.

Cardano's two-layer architecture separates the Cardano Settlement Layer (CSL), responsible for processing transactions, from the Cardano Computation Layer (CCL), which facilitates smart contract execution and decentralized application (dApp) deployment. This division enhances network efficiency, allowing upgrades and modifications to smart contract functionality without affecting the transaction layer.

Security is reinforced through formal verification methods applied to key components of the protocol, ensuring that smart contracts and system processes are mathematically proven to function correctly. Smart contracts are executed through Plutus, a functional programming language based on Haskell, which prioritizes security and reliability. Additionally, Marlowe, a domain-specific language (DSL), simplifies financial contract development, enabling safer execution of blockchain-based financial agreements.

To maintain network integrity and operational resilience, Cardano employs peer-reviewed research and rigorous security audits for its core infrastructure. Validator nodes must meet strict performance requirements to ensure stable transaction processing and prevent network congestion. A treasury system is integrated into the protocol, funding continuous development and ensuring long-term sustainability.

Cardano's interoperability standards support seamless integration with other blockchains and traditional financial systems. Through advancements like sidechains and cross-chain communication

protocols, Cardano enables asset transfers and decentralized applications to function across multiple blockchain networks. Governance is decentralized, with ADA holders participating in protocol upgrades and decision-making through the Project Catalyst governance system.

By combining advanced cryptographic techniques, a layered architecture, and a research-driven approach, Cardano establishes a secure, scalable, and energy-efficient blockchain framework that aligns with emerging regulatory standards and evolving market needs.

### **H.3 Technology Used**

Cardano is a third-generation blockchain designed with a focus on scalability, security, and sustainability. It utilizes a Proof-of-Stake (PoS) consensus mechanism called Ouroboros, which ensures decentralized transaction validation while significantly reducing energy consumption compared to Proof-of-Work (PoW) systems. The network is structured with a dual-layer architecture, separating transaction processing from smart contract execution. The Cardano Settlement Layer (CSL) manages ADA transactions, while the Cardano Computation Layer (CCL) facilitates smart contracts and decentralized applications (dApps), enhancing efficiency and flexibility.

Cardano's smart contract functionality is powered by Plutus, a Haskell-based programming language that prioritizes security and precision. For financial applications, Marlowe, a domain-specific language (DSL), enables the creation of verifiable and automated financial contracts. These technologies support the development of decentralized finance (DeFi) applications, token issuance, and on-chain governance mechanisms.

The blockchain infrastructure is designed for high throughput and scalability, with ongoing developments like Hydra, a layer-2 scaling solution, expected to increase transaction capacity. Interoperability is also a key feature, with Cardano enabling cross-chain communication and integration with traditional financial systems.

To ensure network resilience and security, Cardano employs peer-reviewed research, formal verification methods, and continuous protocol upgrades. Validator nodes are required to meet performance and security standards, maintaining the integrity and efficiency of the network. Additionally, a built-in treasury system funds ongoing development, ensuring long-term sustainability and governance through decentralized decision-making mechanisms.

### **H.4 Consensus Mechanism**

Cardano operates on Ouroboros, a Proof-of-Stake (PoS) consensus protocol designed for security, decentralization, and energy efficiency. Unlike Proof-of-Work (PoW) systems, which require extensive computational resources, Ouroboros selects validators (stake pool operators) based on the amount of ADA staked, reducing energy consumption while maintaining network integrity.

Ouroboros ensures fairness through a randomized leader election process, where slot leaders are assigned to validate and produce blocks in each epoch. This design prevents centralization risks and allows the network to scale efficiently. Transaction finality is achieved through a chain selection rule that ensures all nodes reach consensus on the correct ledger state, minimizing the risk of forks.

Security is reinforced through mathematical proofs and cryptographic techniques, making Ouroboros the first peer-reviewed PoS protocol with formal security guarantees. To further decentralize validation, ADA holders can delegate their stake to stake pools, ensuring broader network participation without requiring users to run a full validator node.

Cardano's consensus mechanism also integrates incentive structures that reward validators and delegators for securing the network while maintaining low operational costs and reducing the environmental impact compared to traditional PoW-based systems. This approach ensures a scalable, sustainable, and secure blockchain infrastructure.

## H.5 Incentive Mechanisms and Applicable Fees

Cardano's incentive model is designed to ensure network security, decentralization, and sustainability by rewarding validators and delegators for participating in the Proof-of-Stake (PoS) consensus mechanism. Validators, also known as stake pool operators, earn rewards for producing and verifying blocks, while ADA holders who delegate their tokens to these stake pools receive a share of the rewards. The amount of ADA staked determines the likelihood of being selected to validate transactions, ensuring a fair and transparent distribution of rewards.

Transaction fees on Cardano are calculated using a predictable fee structure, ensuring cost-efficiency and network sustainability. Fees are determined by a fixed base rate plus a variable component that accounts for transaction size, preventing excessive congestion while keeping costs manageable for users. Unlike some blockchain networks, Cardano does not rely on inflationary block rewards; instead, fees and staking rewards are sourced from transaction fees and the protocol's built-in treasury system, which ensures continuous funding for network development.

To maintain long-term decentralization, the network implements an adjustable parameter system that regulates stake pool saturation. This mechanism prevents over-concentration of stake in a few pools, encouraging broader validator participation. Over time, as network activity increases, transaction fees and staking incentives are expected to adapt dynamically, supporting the network's growth and economic sustainability.

## H.6 Use of Distributed Ledger Technology

True

## H.7 DLT Functionality Description

Cardano uses distributed ledger technology (DLT) through a decentralized blockchain that records all transactions securely and transparently. It employs a proof-of-stake consensus mechanism called Ouroboros, allowing ADA holders to validate blocks and earn rewards. The blockchain has a dual-layer structure: one for ADA transactions and another for smart contracts. This design improves scalability and security. Cardano supports decentralized governance, enabling users to vote on protocol changes. All activities are recorded on a public ledger, ensuring trust without central control. By combining advanced cryptography, staking, and smart contracts, Cardano offers a secure and energy-efficient DLT platform for various applications.

## H.8 Audit

True

## H.9 Audit Outcome

The Cardano blockchain and its native token ADA have undergone multiple independent audits to ensure the security and integrity of the protocol. Key components, including the Ouroboros consensus algorithm and Plutus smart contract platform, have been formally verified and peer-reviewed by academic and cryptographic experts. Cardano's development emphasizes high-assurance code and rigorous testing, with audit outcomes confirming compliance with best practices in blockchain security and functionality. These audits have not revealed any critical vulnerabilities, supporting the platform's reliability and resilience. Ongoing audits and updates continue to enhance Cardano's security as the network evolves and expands its capabilities. Here is the link to Cardano audit report:<sup>3</sup>

<https://www.emurgo.io/press-news/the-process-of-cardano-smart-contract-audits/>

---

<sup>3</sup> [19/4/2025] Updated link for Cardano Audit Report in H.9.

## **I. PART I – INFORMATION ON RISKS**

### **I.1 Offer-Related Risks**

The admission to trading of Cardano (ADA) carries risks related to market volatility, regulatory uncertainties, and trading conditions. While ADA is widely used for staking, decentralized applications (dApps), and financial transactions, its price remains highly volatile, influenced by market sentiment, macroeconomic trends, institutional adoption, and speculative activity.

Although ADA generally maintains high liquidity across major exchanges and decentralized finance (DeFi) platforms, external factors such as regulatory developments, exchange delistings, or broader financial instability could impact trading volumes and price stability. Changes in legal and compliance frameworks may introduce new restrictions on ADA trading, staking, or use in financial applications, potentially affecting its accessibility in certain jurisdictions.

### **I.2 Issuer-Related Risks**

Cardano (ADA) does not have a central issuer, as it operates on a decentralized, permissionless blockchain maintained by independent validators, developers, and stake pool operators. Unlike centrally issued crypto-assets, ADA is not controlled by a single entity that could face financial instability, operational failures, or conflicts of interest. This structure eliminates traditional issuer-specific risks such as mismanagement, insolvency, or governance conflicts tied to a central organization.

However, the absence of a central issuer introduces different risks. Unlike centrally managed assets that may have legal entities responsible for regulatory compliance and investor protections, Cardano's decentralized nature means there is no single entity accountable for addressing regulatory requirements or legal challenges. This could lead to uncertainty in jurisdictions where regulators seek direct engagement with issuers.

Additionally, while governance decisions for protocol upgrades and network changes are determined through community-driven mechanisms like Project Catalyst, there is no central authority ensuring development continuity or guaranteeing protocol changes. The network relies on independent stakeholders and contributors, meaning its evolution depends on sustained participation and coordination among developers, validators, and ADA holders.

Because Cardano's development and maintenance are distributed across multiple entities, any disruptions or failures in key ecosystem participants, such as major development teams or governance bodies, could impact network progress and innovation. Unlike centrally managed projects that can quickly implement strategic changes, Cardano's decentralized governance may result in delays or fragmentation in decision-making, affecting network upgrades and protocol evolution.

### **I.3 Crypto-Assets-Related Risks**

Cardano (ADA) is a decentralized digital asset with no central issuer, eliminating risks associated with centrally controlled crypto-assets. However, ADA is subject to market, liquidity, custody, regulatory, and technological risks that could impact its trading, adoption, and security.

Market risk remains a primary concern, as ADA's price is highly volatile, influenced by macroeconomic conditions, regulatory developments, investor sentiment, and technological advancements. Speculative trading and broader financial trends can lead to significant price fluctuations, affecting investor confidence and adoption.

Liquidity risk exists despite ADA being actively traded on major exchanges and DeFi platforms. Extreme market downturns, exchange delistings, or jurisdictional restrictions could reduce trading volumes, making it more difficult to buy or sell ADA at expected prices. Regulatory actions targeting staking, DeFi applications, or token offerings may also affect ADA's market accessibility.

Custodial and self-custody risks require users to securely manage private keys, as loss of access results in permanent asset loss. Holding ADA on centralized exchanges or custodial services introduces counterparty risks, including exchange insolvency, hacking incidents, or regulatory intervention, potentially leading to frozen or lost funds.

Regulatory and taxation risks vary across jurisdictions, with evolving compliance requirements that could affect ADA's use in staking, DeFi, and financial applications. Legal classifications and regulatory actions could require additional compliance measures, restrict ADA's use in financial services, or introduce taxation policies that impact investors and businesses utilizing ADA.

Smart contract and protocol risks arise from ADA's role in decentralized applications and financial products. While Plutus and Marlowe enhance security through functional programming and formal verification, vulnerabilities in smart contract code, unaudited applications, or exploits in DeFi protocols could lead to financial losses, hacks, or systemic risks within the Cardano ecosystem.

Interoperability and cross-chain risks exist as Cardano integrates with other blockchains and financial systems. Dependence on bridges or third-party interoperability solutions introduces additional attack vectors, and any failure in these mechanisms could affect token transfers, liquidity, or the functionality of Cardano-based assets.

Quantum computing threats pose a long-term risk to ADA's cryptographic security, potentially impacting key management, transaction signing mechanisms, and network integrity. While such risks remain theoretical, future advancements in quantum computing may necessitate cryptographic upgrades to maintain ADA's security.

#### **I.4 Project Implementation-Related Risks**

Cardano, as a decentralized, open-source blockchain, faces certain risks related to protocol development, scalability, validator distribution, and smart contract execution, which could impact its long-term adoption and efficiency.

**Protocol Development and Upgrade Risks** – Cardano's on-chain governance system requires stakeholder voting through Project Catalyst for protocol changes. While this system ensures decentralization, it may lead to delays, governance disagreements, or slower execution of critical upgrades, potentially affecting network efficiency and feature rollouts. Unexpected software bugs or vulnerabilities introduced during upgrades could also disrupt network operations.

**Scalability and Performance Risks** – While Cardano is designed for high throughput and efficiency, increasing adoption of smart contracts, DeFi applications, and tokenized assets may introduce temporary congestion or computational inefficiencies. Although solutions like Hydra scaling aim to enhance transaction capacity, their successful implementation and adoption remain key challenges.

**Validator and Network Stability Risks** – Cardano's Ouroboros PoS mechanism relies on stake pools to validate transactions. If staking power becomes too concentrated among a small number of pools, it could impact decentralization and governance. Additionally, the hardware and operational costs of running stake pools may limit participation, potentially reducing the number of active validators securing the network.

**Smart Contract Execution Risks** – Cardano's Plutus-based smart contract platform emphasizes formal verification for security, but complex applications may still face execution inefficiencies, contract vulnerabilities, or unintended behaviors. Bugs in Plutus scripts or dApp frameworks could impact developers and users, requiring ongoing optimizations and audits.

#### **I.5 Technology-Related Risks**

Cardano operates on a third-generation blockchain with a Proof-of-Stake (PoS) consensus mechanism, ensuring energy efficiency, scalability, and security. However, certain technology-related risks could impact network performance, decentralization, and smart contract execution.

Cardano's reliance on Plutus-based smart contracts, while offering formal verification and enhanced security, presents risks if poorly written or unaudited contracts introduce vulnerabilities that could be exploited. Additionally, the complexity of functional programming in Haskell may create a steep learning curve for developers, potentially slowing adoption and increasing the risk of coding errors in smart contracts.

While Cardano's Ouroboros PoS consensus ensures resilience against 51% attacks, network decentralization depends on stake pool distribution. If a small number of stake pools accumulate a disproportionate share of ADA delegation, it could reduce the network's security and governance diversity.

Scalability remains a challenge, as current transaction throughput is lower compared to some high-performance blockchains. Although upgrades like Hydra aim to improve scalability, their implementation, adoption, and long-term effectiveness remain untested at scale. Increased adoption of DeFi applications, NFTs, and tokenized assets could lead to network congestion, higher transaction fees, or reduced efficiency if scaling solutions do not perform as expected.

Cardano's upgrade and governance model relies on community voting through Project Catalyst, ensuring decentralization but potentially delaying critical updates or protocol improvements due to governance disputes or low participation rates. This could slow down the adoption of new features, security patches, or optimizations.

Long-term risks include quantum computing threats, which could compromise cryptographic security, necessitating future upgrades to protect key management and transaction integrity. While theoretical today, advancements in quantum technology could eventually require a transition to post-quantum cryptographic standards.

## **I.6 Mitigation Measures**

Cardano addresses technology-related risks through a combination of protocol enhancements, security measures, and network governance improvements to ensure scalability, decentralization, and resilience.

The Ouroboros Proof-of-Stake (PoS) consensus mechanism mitigates network security risks by distributing validation responsibilities among independent stake pool operators, reducing the likelihood of centralized control or 51% attacks. To further enhance decentralization, staking incentives and delegation mechanisms encourage a broad distribution of stake across multiple pools, preventing dominance by a small group of validators.

Scalability risks are addressed through continuous protocol upgrades, including Hydra, a layer-2 scaling solution, designed to increase transaction throughput while minimizing congestion. Future improvements in network optimization, smart contract execution, and transaction processing aim to maintain low fees and high efficiency as adoption grows.

Security risks, including smart contract vulnerabilities, are mitigated through formal verification methods, ensuring that Plutus-based contracts undergo rigorous mathematical validation before deployment. Additionally, regular security audits and community-led code reviews help detect and address potential exploits.

Governance risks are minimized through Project Catalyst, a decentralized voting system that allows ADA holders participate in protocol decisions and funding proposals. This ensures that network upgrades and improvements are community-driven, reducing the likelihood of protocol stagnation or governance conflicts.

To prepare for long-term cryptographic security risks, including quantum computing threats, ongoing research explores post-quantum cryptographic standards to future-proof key management and transaction security.

## J. PART J – INFORMATION ON THE SUSTAINABILITY INDICATORS IN RELATION TO ADVERSE IMPACT ON THE CLIMATE AND OTHER ENVIRONMENT-RELATED ADVERSE IMPACTS

*Adverse impacts on climate and other environment-related adverse impacts.*

### J.1 Information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism

The ADA token operates on the Cardano blockchain, which utilizes the Ouroboros Proof-of-Stake (PoS) consensus mechanism. PoS is generally considered to be more energy-efficient than traditional Proof-of-Work (PoW) models, as it does not rely on computational mining. However, it should be noted that this energy efficiency is relative, and does not imply an absolute reduction in environmental impact or energy consumption. Rather, Cardano’s approach offers a comparatively lower energy burden per transaction, contributing to a more sustainable network in a relative sense.

In accordance with MiCA regulations requiring transparency on sustainability indicators, Cardano discloses detailed environmental metrics. The estimated annual energy consumption of the Cardano network is approximately 813,456 kWh, with around 17.41% of that energy derived from renewable sources. Reported Scope 2 emissions for the network total approximately 273.96 tCO<sub>2</sub>e per year. On a per-transaction basis, Cardano’s energy intensity is estimated at 0.00014 kWh, and its greenhouse gas (GHG) intensity is approximately 0.00005 kgCO<sub>2</sub>e.

General information	
<b>S.1 Name</b> <i>Name reported in field A.1</i>	LCX
<b>S.2 Relevant legal entity identifier</b> Identifier referred to in field A.2	529900SN07Z6RTX8R418
<b>S.3 Name of the crypto-asset</b> Name of the crypto-asset, as reported in field D.2	ADA
<b>S.4 Consensus Mechanism</b> The consensus mechanism, as reported in field H.4	Cardano operates on Ouroboros, a Proof-of-Stake (PoS) consensus protocol designed for security, decentralization, and energy efficiency. Unlike Proof-of-Work (PoW) systems, which require extensive Computational resources, Ouroboros selects validators (stake pool operators) based on the amount of ADA staked, reducing energy consumption while maintaining network integrity. Ouroboros ensures fairness through a randomized leader election process, where slot leaders are assigned to validate and produce blocks in each epoch. This design prevents centralization risks and allows the network to scale efficiently. Transaction finality is achieved through a chain selection rule that ensures all nodes reach consensus on the correct ledger state, minimizing the risk of forks. Security is reinforced through mathematical proofs and cryptographic techniques, making Ouroboros the first peer-reviewed PoS protocol with formal security guarantees. To further

	<p>decentralize validation, ADA holders can delegate their stake to stake pools, ensuring broader network participation without requiring users to run a full validator node. Cardano's consensus mechanism also integrates incentive structures that reward validators and delegators for securing the network while maintaining low operational costs and reducing the environmental impact compared to traditional PoW-based systems. This approach ensures a scalable, sustainable, and secure blockchain infrastructure.</p>
<p><b>S.5 Incentive Mechanisms and Applicable Fees</b> Incentive mechanisms to secure transactions and any fees applicable, as reported in field H.5</p>	<p>Cardano's incentive model is designed to ensure network security, decentralization, and sustainability by rewarding validators and delegators for participating in the Proof-of-Stake (PoS) consensus mechanism. Validators, also known as stake pool operators, earn rewards for producing and verifying blocks, while ADA holders who delegate their tokens to these stake pools receive a share of the rewards. The amount of ADA staked determines the likelihood of being selected to validate transactions, ensuring a fair and transparent distribution of rewards.</p> <p>Transaction fees on Cardano are calculated using a predictable fee structure, ensuring cost-efficiency and network sustainability. Fees are determined by a fixed base rate plus a variable component that accounts for transaction size, preventing excessive congestion while keeping costs manageable for users. Unlike some blockchain networks, Cardano does not rely on inflationary block rewards; instead, fees and staking rewards are sourced from transaction fees and the protocol's built-in treasury system, which ensures continuous funding for network development. To maintain long-term decentralization, the network implements an adjustable parameter system that regulates stake pool saturation. This mechanism prevents over-concentration of stake in a few pools, encouraging broader validator participation. Over time, as network activity increases, transaction fees and staking incentives are expected to adapt dynamically, supporting the network's growth and economic sustainability.</p>
<p><b>S.6 Beginning of the period to which the disclosure relates</b></p>	2024-03-10
<p><b>S.7 End of the period to which the disclosure relates</b></p>	2025-03-10
<p><b>Mandatory key indicator on energy consumption</b></p>	
<p><b>S.8 Energy consumption</b></p>	813456.24717 kWh per year

Total amount of energy used for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions, expressed per calendar year	
<b>Sources and methodologies</b>	
<p><b>S.9 Energy consumption sources and Methodologies</b></p> <p>Sources and methodologies used in relation to the information reported in field S.8</p>	<p>The energy consumption of this asset is aggregated across multiple components: For the calculation of energy consumptions, 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 of question in scope and we update the mappings regularly, based on data of the Digital Token Identifier Foundation. To determine the energy consumption of a token, the energy consumption of the network(s) binance_smart_chain is calculated first. Based on the crypto asset’s gas consumption per network, the share of the total consumption of the respective network that is assigned to this asset is defined. 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 of question in scope and we update the mappings regularly, based on data of the Digital Token Identifier Foundation.</p>

**J.2 Supplementary information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism**

<b>Supplementary key indicators on energy and GHG emissions</b>	
<p><b>S.10 Renewable energy consumption</b></p> <p>Share of energy used generated from renewable sources, expressed as a percentage of the total amount of energy used per calendar year, for the validation of</p>	17.405765334 %

transactions and the maintenance of the integrity of the distributed ledger of transactions.	
<b>S.11 Energy intensity</b> Average amount of energy used per validated transaction	0.00014 kWh per transaction
<b>S.12 Scope 1 DLT GHG emissions – Controlled</b> Scope 1 GHG emissions per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions	0.00000 tCO2e/a per year
<b>S.13 Scope 2 DLT GHG emissions – Purchased</b> Scope 2 GHG emissions, expressed in tCO2e per calendar year for the validation of transactions and the maintenance of the integrity of the distributed ledger of transactions	273.95502 tCO2e/a per year
<b>S.14 GHG intensity</b> Average GHG emissions (scope 1 and scope 2) per validated transaction	0.00005 kgCO2e per transaction
<b>Sources and methodologies</b>	
<b>S.15 Key energy sources and methodologies</b> Sources and methodologies used in relation to the information reported in fields S.10 and S.11	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 incentivization structure and consensus mechanism. This geo-information is merged with public information from the European Environment Agency (EEA) and thus determined.
<b>S.16 Key GHG sources and methodologies</b> Sources and methodologies used in relation to the information reported in fields S.12, S.13 and S.14	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 incentivization structure and consensus mechanism. This geo-information is merged with public information from the European Environment Agency (EEA) and thus determined.