

**White paper drafted under the  
European Markets in Crypto-  
Assets Regulation (EU)  
2023/1114 for FFG TDS6NVZ46**

## Preamble

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## **01. Date of notification**

This white paper was notified on 2026-05-22.

## **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 OSMO referred to in this white paper is a crypto-asset other than EMTs and ARTs and is deployed on the Osmosis and Cosmos networks, according to the DTI FFG shown in section F.14, as of 2026-05-20. The maximum supply of the crypto-asset is 1,000,000,000 tokens. The first activity of the Osmosis network can be viewed on 2021-06-18 (block hash: C8DC787FAAE0941EF05C75C3AECCF04B85DFB1D4A8D054A463F323B0D9459719, source: <https://www.mintscan.io/osmosis/block/1>, accessed 2026-05-20). The first activity of the relevant OSMO-related IBC channel between Osmosis and Cosmos Hub can be viewed on 2021-06-19 (channel: OSMOSIS/channel-0 – COSMOS HUB/channel-141, source: <https://www.mintscan.io/osmosis/relayers/channel-0/cosmos/channel-141>, accessed 2026-05-20).

Osmosis is an Automated Market Maker (AMM) protocol and a sovereign Layer 1 blockchain built using the Cosmos SDK. It serves as a decentralised exchange hub that utilises the Inter-Blockchain Communication (IBC) protocol to enable cross-chain transactions and data exchange between independent blockchains within the Cosmos ecosystem. The network operates as an application-specific blockchain where transaction execution, liquidity provisioning, and trading logic are implemented at the protocol level. Consensus is achieved through a Proof-of-Stake mechanism, under which validators participate in block production and transaction validation, while IBC enables the transfer of crypto-assets and data packets across connected chains without reliance on central intermediaries.

The OSMO crypto-asset serves as the native functional and governance token of the Osmosis network. It is used to pay transaction fees on the network. Holders who delegate OSMO to validators contribute to the security of the network and are eligible to receive staking rewards and a share of transaction fees in return. Staked OSMO holders may participate in on-chain governance, including voting on protocol upgrades, the base network swap fee, and the allocation of liquidity incentives to specific pools. Under the OSMO 2.0 tokenomics framework, protocol-level trading fees are directed to stakers, and the ProtoRev module performs on-chain arbitrage, using recovered amounts to permanently reduce the circulating supply of the crypto-asset.

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**

Osmosis Foundation Company Ltd.

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

The legal form of Osmosis Foundation Company Ltd. is K575, which corresponds to "Foundation company".

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

The registered address of Osmosis Foundation Company Ltd. is ASCENTIUM (CAYMAN) LIMITED, P. O. Box 10240, 4th Floor, Harbour Place, 103 South Church Street, George Town, Grand Cayman KY1-1002,

Cayman Islands,

KY1

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

Could not be found while drafting this white paper (2026-05-20).

Could not be found while drafting this white paper (2026-05-20).

Could not be found while drafting this white paper (2026-05-20).

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

The Osmosis Foundation Company Ltd. was registered on 2022-10-21.

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

Could not be found while drafting this white paper (2026-05-20).

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

Cayman Islands Registration Number: 394903

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

Could not be found while drafting this white paper (2026-05-20).

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

<b>Identity</b>	<b>Function</b>	<b>Business Address</b>
Could not be found	Could not be found	Could not be found

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

Could not be found while drafting this white paper (2026-05-20).

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

Could not be found while drafting this white paper (2026-05-20).

## **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: "Osmosis", Short Name: "OSMO" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-20).

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

Long Name: "Osmosis" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-20).

### **D.3 Abbreviation**

Short Name: "OSMO" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-20).

### **D.4 Crypto-asset project description**

According to publicly available information (source: <https://docs.osmosis.zone/> and related documentation, accessed 2026-05-20), the Osmosis ecosystem is a crypto-asset initiative concerned with the development and operation of a decentralised exchange infrastructure implemented as a sovereign distributed-ledger network within the broader Cosmos ecosystem. The project is designed to facilitate the exchange of crypto-assets across multiple independent blockchains through the use of interoperable communication standards. Osmosis is built using the Cosmos SDK framework and operates as an application-specific blockchain that integrates with other networks via the Inter-Blockchain Communication (IBC) protocol, enabling the transfer of assets and data between compatible chains based on cryptographic verification mechanisms.

Within this framework, Osmosis functions as a coordination and execution environment for decentralised trading activities, allowing participants to create and interact with liquidity pools that determine asset pricing and exchange conditions algorithmically. The operation of the network depends on the continued availability and performance of its underlying software components, validator participation, and interoperability with external IBC-enabled networks.

The Osmosis network utilises a Proof-of-Stake consensus mechanism, under which validators are responsible for block production and transaction validation. Participants may delegate tokens to validators in order to support network security and participate indirectly in consensus. The protocol also incorporates mechanisms for cross-chain liquidity provisioning, enabling users to supply assets originating from multiple connected networks and to engage in decentralised trading activities without reliance on centralised intermediaries. Certain features, including cross-chain routing, liquidity incentives, and pool configuration parameters, depend on governance decisions and technical implementation and may be modified over time. The OSMO crypto-asset functions as the native network-participation and coordination instrument within the Osmosis ecosystem.

The project does not involve the granting of ownership, profit-participation rights, or legal claims against the project entity or its contributors. Instead, it centres on the creation of a technical environment in which the OSMO crypto-asset may serve as a governance and network-participation input for certain protocol processes. The long-term evolution of the Osmosis system, including the scope of available features, the decentralisation roadmap, validator-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
Osmosis Foundation Company Ltd.	Other person involved in implementation	ASCENTIUM (CAYMAN) LIMITED, P. O. Box 10240, 4th Floor, Harbour Place, 103 South Church Street, George Town, Grand Cayman KY1-1002	Cayman Islands
Osmurica Inc.	Other person involved in implementation	2810 N Church St., Unit 80170, Wilmington, DE, 19802, United States	United States
Osmosis Grants Foundation	Other person involved in implementation	Cannot be found	Cayman Islands
Sunny Aggarwal	Other person involved in implementation	Cannot be found	United States
Dev Ojha	Other person involved in implementation	Cannot be found	United States

### D.6 Utility Token Classification

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

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

As defined in Article 3(9) of Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets – amending Regulations (EU) No 1093/2010

and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 – a utility token is “a type of crypto-asset that is only intended to provide access to a good or a service supplied by its issuer”. This crypto-asset does not qualify as a utility token, as its intended use goes beyond providing access to a good or a service supplied solely by the issuer.

## D.8 Plans for the token

This section provides an overview of the historical developments related to the OSMO 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.

The Osmosis protocol's roadmap has been communicated through a series of blog posts published on the official Osmosis community forum (source: <https://forum.osmosis.zone/c/blog>; accessed 2026-05-20). Across these publications, several protocol upgrades, ecosystem initiatives, and crypto-asset-related developments have been disclosed that affect the evolution of the Osmosis protocol and the role of the OSMO crypto-asset.

Past milestones:

- Quadratic Fairdrop Snapshot (18 February 2021): A snapshot of ATOM balances was taken during the Cosmos Hub Starship upgrade to determine distribution parameters for the OSMO crypto-asset.
- Mainnet Launch (June 2021): The Osmosis protocol was launched, enabling decentralised exchange functionality within the Cosmos ecosystem.
- CosmWasm Integration (February 2022): Smart contract functionality was introduced through CosmWasm, expanding programmability within the protocol.
- Superfluid Staking Introduction (February 2022): A mechanism allowing liquidity providers to stake underlying OSMO within liquidity pools was implemented, linking liquidity provision with network security participation.
- Terra-Related Liquidity Measures (May 2022): Governance Proposal #225 enabled the unlocking of Terra-related liquidity positions in response to market disruption events.
- v9 Upgrade (June 2022): Protocol upgrade introducing enhanced CosmWasm integration and additional modules such as TokenFactory and time-weighted average pricing (TWAP).
- ProtoRev Module Deployment (January 2023): Implementation of an internal arbitrage mechanism to capture maximal extractable value (MEV) for protocol-level allocation.
- Lending Integration (February 2023): Deployment of Mars Protocol's lending functionality on Osmosis, enabling borrowing and lending use cases.

- OSMO 2.0 Update (June 2023): Adjustment of tokenomics including a reduction in inflation and reallocation of incentives towards staking.
- Concentrated Liquidity (July 2023): Introduction of supercharged liquidity allowing liquidity provision within defined price ranges.
- Taker Fee Introduction (October 2023): Implementation of a transaction fee mechanism applied to trades, contributing to protocol revenue.
- Modular Ecosystem Expansion (Early 2024): Integration efforts targeting modular blockchain ecosystems, including rollup-based architectures.
- Reward Structure Changes (July 2025): Governance actions to reduce staking rewards and adjust liquidity incentives.
- Treasury Strategy Update (August 2025): Reallocation of community pool resources towards reserve strategies, including Bitcoin exposure.
- Fee and Reporting Adjustments (October 2025): Introduction of fee tiering and updates to circulating supply reporting methodologies.
- Transition Towards Low Inflation (End 2025): Protocol trajectory aimed at achieving near-zero inflation or a deflationary supply dynamic.

Future milestones:

- Maximum Supply Convergence (No specific date): Continued reduction in token emissions towards an asymptotic maximum supply of 1,000,000,000 OSMO.
- Mesh Security Deployment (No specific date): Ongoing development and implementation of cross-chain security mechanisms designed to monitor and respond to activity across interconnected blockchain networks.

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 OSMO crypto-asset for its holders.

## **D.9 Resource allocation**

Based on information from various public, third-party, and industry sources, it is reported that the crypto-asset project associated with the OSMO token has conducted a funding round involving a private token sale.

A press release dated 12 October 2021 and attributed to the Osmosis Foundation states that a first fundraiser was completed through a token sale conducted from the foundation treasury, with reported proceeds of approximately USD 21,000,000. The same press release identifies Paradigm as lead investor, with reported participation from Robot Ventures, Nascent, Ethereum and Figment.

Third-party reporting and investor portfolio disclosures describe the transaction as a private token sale originating from the project's treasury and intended to support the continued development and expansion of the Osmosis protocol. No information regarding valuation, token allocation structure, vesting or lock-up arrangements, or other contractual terms of the transaction is disclosed in the referenced materials.

Except for the press release attributed to the Osmosis Foundation, the further information above is derived from public announcements, investor portfolio disclosures, and third-party publications. The precise amounts, valuation, token allocation structure, vesting or lock-up arrangements, legal structure, or other contractual terms of the reported token sale could not be independently verified on the basis of the publicly available information reviewed. The information should therefore be considered indicative only.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The maximum supply of the crypto-asset is set at 1,000,000,000 tokens. Investors should note that changes in the effective supply – including sudden increases in circulating units or unexpected burns – may affect the token's price and liquidity. The effective amount of units available on the market depends on the number of units released by the issuer or other parties at any given time, as well as potential reductions through "burning." As a result, the circulating supply may differ from the total supply.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The costs involved in accessing the trading platform depend on the specific fee structure and terms of the respective crypto-asset service provider. These may include trading fees, deposit or

withdrawal charges, and network-related gas fees. Investors are advised to consult the applicable fee schedule of the chosen platform before engaging in trading activities.

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

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

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

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

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

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

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

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

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

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

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

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

claims to its holders, and therefore remains outside the scope of regulatory frameworks applicable to traditional financial instruments.

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

According to publicly available information in the Osmosis documentation (<https://docs.osmosis.zone/>, accessed 2026-05-20) and associated governance resources, the OSMO token is the native on-chain crypto-asset of the Osmosis network and is used for protocol-level participation in network security, liquidity coordination, and on-chain governance. OSMO holders can delegate (stake) OSMO to validators to support the operation and security of the network and, in return, participate in the distribution of protocol-defined rewards.

OSMO's core functionality is based on staking and liquidity coordination within a decentralised exchange environment. The Osmosis network maintains an active validator set (configured via on-chain parameters), and OSMO holders who do not operate validator infrastructure may participate as delegators by bonding OSMO to a selected validator. In parallel, the protocol facilitates decentralised liquidity provisioning through automated market maker mechanisms, allowing users to contribute assets to liquidity pools and receive incentives based on pool participation and configuration.

OSMO also enables decentralised decision-making through on-chain governance. Bonded OSMO holders may submit, deposit on, and vote on governance proposals, including protocol upgrades, fee parameter adjustments, and the allocation of liquidity incentives to specific pools. Voting power is generally proportional to the amount of bonded OSMO, subject to protocol rules and delegation structures.

Within the Osmosis network, OSMO is used as the accounting basis for validator and delegator incentives as well as for liquidity-related reward mechanisms. Incentives may include newly issued OSMO distributed to validators, delegators, and liquidity providers in accordance with protocol-defined parameters, as well as transaction-related fees generated through trading activity on the platform. The protocol also incorporates additional mechanisms, such as configurable fee structures, liquidity bonding requirements, and modules that may perform protocol-level operations affecting token flows, including the redistribution or reduction of tokens under specific conditions. The availability and implementation of these mechanisms depend on governance decisions and technical configuration and may change over time.

The OSMO 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 Osmosis protocol environment. The actual usability of OSMO depends on factors such as system stability, smart-contract execution, development progress, governance decisions, and the operational conditions of the Osmosis blockchain, which are outside the control of token holders.

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

Future milestones:

- Maximum Supply Convergence (No specific date): Continued reduction in token emissions towards an asymptotic maximum supply of 1,000,000,000 OSMO.

- Mesh Security Deployment (No specific date): Ongoing development and implementation of cross-chain security mechanisms designed to monitor and respond to activity across interconnected blockchain networks.

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 OSMO 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 Osmosis and Cosmos networks. 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: "Osmosis" according to the Digital Token Identifier Foundation ([www.dtif.org](http://www.dtif.org), DTI see F.13, FFG DTI see F.14 as of 2026-05-20).

**F.8 Website of the issuer**

<https://osmosis.zone/>

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

2026-06-25

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

2026-06-25

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

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

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

EN

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

S87NJRT7T, RS9SFC444, XJJVDPSK0

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

TDS6NVZ46

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

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

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

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

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

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

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

Germany

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

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

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

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

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

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

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

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

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

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

Information on future offers to the public of crypto-assets was not available at the time of writing this white paper (2026-05-20).

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

At genesis, a total of 100,000,000 OSMO tokens were initially released. The Osmosis token model provides for an asymptotic maximum supply of approximately 1,000,000,000 OSMO, achieved over time through a predefined issuance schedule.

Of the initial genesis supply, 50,000,000 OSMO, representing 50% of the tokens released at genesis, were allocated to a strategic reserve. This allocation forms part of the crypto-assets retained by project-related stakeholders and is intended to support ecosystem development, including incentivisation of contributors, alignment of advisors, and other network-related activities.

Following the initial distribution, the token model has undergone subsequent updates through governance processes, including adjustments to emission rates, reward distribution mechanisms, and the introduction of additional fee-based and supply-reduction mechanisms. These changes reflect an evolution from an initial distribution-focused phase towards a model incorporating reduced inflation and increased reliance on protocol-generated revenues.

Note: While the allocation to the strategic reserve is publicly described, including in the Osmosis token distribution documentation (<https://medium.com/osmosis/osmo-token-distribution-ae27ea2bb4db>, accessed 2026-05-20), the specific wallet addresses or custody arrangements associated with this allocation may not be fully transparent or attributable to specific legal persons. Token movements, distributions, or internal allocation decisions relating to this reserve may occur over time and could affect the distribution of holdings and associated governance influence within the network. The current token distribution can be monitored on-chain via publicly accessible blockchain explorers.

## **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 2026-05-20.

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

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

Not applicable.

## **G.14 Token value protection schemes**

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

## **G.15 Token value protection schemes description**

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

## **G.16 Compensation schemes**

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

## **G.17 Compensation schemes description**

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

## **G.18 Applicable law**

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

## **G.19 Competent court**

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

# **Part H – information on the underlying technology**

## **H.1 Distributed ledger technology (DLT)**

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

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

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

### 1. Network Protocols

Osmosis is an application-specific Layer 1 blockchain built using the Cosmos SDK. Consensus and peer-to-peer networking are provided through CometBFT, formerly Tendermint Core, which implements Byzantine Fault Tolerant state-machine replication. Osmosis also supports cross-chain communication through the Inter-Blockchain Communication protocol, which enables transfers and messages between IBC-enabled chains.

### 2. Transaction and Address Standards

Transactions are processed through Cosmos SDK modules and may include transfers, swaps, staking, governance actions, and IBC transfers. Osmosis uses Cosmos-style account and transaction standards, including Bech32-format addresses and sequence-based account handling. IBC transfers follow the ICS-20 fungible token transfer standard.

### 3. Blockchain Data Structure & Block Standards

Osmosis separates consensus from application-level execution. CometBFT orders and finalises blocks, while the Osmosis application layer executes deterministic state transitions through Cosmos SDK modules. Application state is committed through cryptographic state roots included in block headers, allowing validators to agree on the resulting network state.

#### 4. Upgrade & Improvement Standards

Protocol upgrades are coordinated through Osmosis governance and scheduled software upgrades. Validators are required to run compatible software at the relevant upgrade point. As an IBC-connected chain, Osmosis upgrades must also preserve compatibility with IBC clients, channels, and counterparty chains where applicable.

The following applies to Cosmos:

##### 1. Network Protocols

The Cosmos ecosystem operates on a modular and decentralised architecture designed to ensure deterministic consensus and interoperability. Consensus and peer-to-peer networking are provided by CometBFT (formerly Tendermint Core), which implements a Byzantine Fault Tolerant Proof-of-Stake consensus mechanism under which validators propose and vote on blocks to achieve finality. Communication between the consensus layer and the application layer is handled through the Application BlockChain Interface (ABCI). Cross-chain interoperability is enabled through the Inter-Blockchain Communication (IBC) protocol, which allows independent blockchains to exchange messages and transfer crypto-assets using cryptographic proofs.

##### 2. Transaction and Address Standards

Transactions are defined at the application level and validated through a standardised processing pipeline that includes signature verification, nonce checks, gas accounting, and fee deduction. Accounts store authentication information such as public keys, addresses, and sequence numbers, with addresses commonly represented using Bech32 encoding. Standard transaction types support asset transfers, staking, and governance actions, while IBC introduces packet-based transactions that enable verified cross-chain communication. Transaction fees are determined by chain-specific fee markets and are typically paid using the network's native staking crypto-asset.

##### 3. Blockchain Data Structure & Block Standards

The blockchain architecture separates consensus from state execution, with CometBFT responsible for block ordering and the application layer responsible for deterministic state transitions. Application state is maintained using Merkle-based data structures, including Simple Merkle Trees and IAVL+ trees, producing a cryptographic state root (AppHash) that is committed to each block header via the ABCI Commit process and signed by a supermajority of validators.

##### 4. Upgrade & Improvement Standards

Protocol changes and network upgrades are coordinated through on-chain governance and scheduled upgrade mechanisms that activate protocol changes at predefined block heights. Validators are required to run updated software at the scheduled upgrade point, enabling coordinated upgrades without unsynchronised network halts.

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

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

#### 1. Decentralised Ledger

Osmosis operates as a decentralised ledger that records all transactions in an append-only blockchain structure. Blocks are validated and finalised through a Byzantine Fault Tolerant consensus mechanism, with the intention of preserving an unalterable and transparent record of token transfers, liquidity pool interactions, and balances.

#### 2. Private Key Management

To safeguard their OSMO holdings, users must securely store their wallet private keys and recovery phrases. The Osmosis protocol does not define standards for private key storage; key management is handled at the wallet or client level, including software and hardware wallets compatible with the Cosmos SDK.

#### 3. Modular Design and Smart Contracting

Osmosis follows a modular architecture based on the Cosmos SDK. Core protocol functionality, including the AMM and liquidity pool logic, is implemented at the application layer. Additional smart-contract functionality is provided through a permissioned CosmWasm module, whereby contract deployments require on-chain governance approval, ensuring that token logic and application-level rules added to the protocol remain subject to community oversight.

The following applies to Cosmos:

#### 1. Decentralised Ledger

The Cosmos Hub operates as a decentralised ledger that records all transactions in an append-only blockchain structure. Blocks are validated and finalised through a Byzantine Fault Tolerant consensus mechanism, with the intention of preserving an unalterable and transparent record of token transfers and balances.

#### 2. Private Key Management

To safeguard their ATOM holdings, users must securely store their wallet private keys and recovery phrases. The Cosmos Hub protocol does not define standards for private key storage; key management is handled at the wallet or client level, including software and hardware wallets compatible with the Cosmos SDK.

### 3. Modular Design and Smart Contracting

The Cosmos Hub follows a modular architecture based on the Cosmos SDK. While the Hub itself focuses on native asset transfers and staking, smart-contract functionality may be provided through CosmWasm-based modules or connected application chains, where token logic and application-level rules are implemented outside the core ledger.

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

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

Osmosis operates a Proof-of-Stake consensus mechanism based on the Cosmos SDK and CometBFT, formerly Tendermint Core. CometBFT provides Byzantine Fault Tolerant state-machine replication for application-specific blockchains and is designed to provide deterministic finality once the required validator voting threshold is reached.

Consensus participants are validators who bond OSMO, or receive delegated OSMO from third-party token holders. Validator voting power is determined by the amount of OSMO bonded to the validator, including delegated stake. Validators participate in block production and consensus by proposing blocks and signing votes.

The active validator set is limited by protocol parameters. Current public parameter data indicates a maximum active validator set of 100 validators, following governance changes that reduced the set from 120 to 100 to improve performance and reduce consensus overhead.

Consensus proceeds through proposal and voting rounds. A block is committed once more than two-thirds of the total validator voting power has signed the relevant pre-commit for that block. This provides immediate finality and avoids probabilistic forks, provided that less than one-third of total validator voting power behaves maliciously or fails.

Osmosis also uses slashing and jailing mechanisms to support validator accountability. Current public parameter data indicates a 5% slash for double-signing, no direct slash for downtime, and a downtime jail duration of one minute. Validators that fail operational requirements may be removed from the active validator set until they rejoin in accordance with protocol rules. Delegators are exposed to validator-related slashing risk through the validators to whom they delegate.

The following applies to Cosmos:

The Cosmos Hub operates a Proof-of-Stake (PoS) consensus mechanism based on CometBFT (formerly Tendermint consensus), a Byzantine Fault Tolerant (BFT) algorithm designed to provide fast finality and deterministic state replication.

Consensus participants are validators who bond the native crypto-asset ATOM as collateral and obtain voting power proportional to their bonded stake, including delegated ATOM from third parties. Validators participate in block production and consensus by proposing blocks and broadcasting cryptographic votes.

Consensus proceeds in rounds, each consisting of a block proposal, followed by two voting phases (pre-vote and pre-commit). A block is finalised and irreversibly committed once more than two-thirds of the total validator voting power pre-commits to the same block in the same round. This mechanism provides immediate finality and prevents probabilistic forks.

CometBFT ensures Byzantine Fault Tolerance, meaning the network remains safe and consistent as long as less than one-third of total voting power behaves maliciously or fails. The Cosmos Hub maintains a bounded validator set, initially capped at 100 validators and designed to increase gradually over time to balance decentralisation and performance.

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

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

### Validator and Delegator Rewards

Validators earn rewards from transaction fees and protocol emissions for their role in securing the network and processing transactions. Rewards are distributed in OSMO tokens. Delegators who stake their OSMO tokens with validators receive a proportional share of these rewards. New OSMO tokens are issued on an epoch basis (approximately once per day) and allocated in part to staking rewards. The allocation of newly issued tokens is subject to protocol governance and may be adjusted over time.

### Liquidity Provider Incentives

Users providing liquidity to Osmosis pools earn swap fees generated by trading activity and may receive additional incentives in the form of OSMO tokens. These incentives are designed to support liquidity depth and trading efficiency on the protocol. The level and structure of such incentives may be adjusted through governance.

### Transaction Fees

Users pay transaction fees in OSMO tokens, or in certain whitelisted assets, for network activities including swaps, staking, and governance participation. These fees are distributed to validators and delegators, contributing to their ongoing economic incentives.

## Slashing and Penalties

To discourage malicious or negligent behaviour, the protocol employs a bonded Proof-of-Stake model in which validators' staked assets may be subject to slashing. Validators that engage in protocol violations, such as double-signing, may incur a reduction of their staked assets. Validators that fail to meet operational requirements, such as maintaining sufficient uptime, may be temporarily removed from the active validator set. Delegators are exposed to the risks associated with the validators to whom they delegate.

The following applies to Cosmos:

The Cosmos Hub secures its Proof-of-Stake consensus mechanism through an integrated system of economic incentives and penalties. This framework is designed to encourage honest participation by validators and delegators, deter malicious or negligent behaviour, and ensure the long-term security and sustainability of the network.

## Incentive Mechanisms (Rewards)

Validators and delegators are rewarded for participating in block production and consensus through a combination of inflationary issuance and transaction fees. The native staking crypto-asset ATOM is issued as an inflationary reward and distributed to bonded validators and delegators in proportion to their bonded stake. In addition, users pay transaction fees, which are collected by validators and periodically redistributed to bonded participants, subject to validator-defined commission rates.

## Transaction Fees

The Cosmos Hub applies a gas-based fee model to limit network spam and compensate network operators. Fees are calculated based on transaction complexity and size using a gas limit and a gas price, and are deducted from the transaction signer prior to execution. Validators may set their own minimum gas prices and may accept multiple token denominations as fees, selecting which transactions to include within block gas limits.

## Fee Distribution and Reserve Pool

Collected transaction fees are redistributed at regular intervals to bonded validators and delegators in proportion to their bonded ATOM. A predefined portion of these fees (by default 2%) is allocated to a reserve pool, which is intended to support network security and sustainability and may be distributed through on-chain governance decisions.

## Penalties and Slashing

Bonded ATOM functions as economic collateral and is subject to slashing in the event of protocol violations. Validators that commit safety faults, such as double-signing conflicting blocks at the same height, are subject to significant slashing and are typically permanently removed from the validator set.

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

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

## **H.7 DLT functionality description**

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

## **H.8 Audit**

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

## **H.9 Audit outcome**

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

# **Part I – Information on risks**

## **I.1 Offer-related risks**

### 1. Regulatory and Compliance

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

### 2. Trading venue and connection risk

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

markets may operate under differing governance, compliance, and oversight standards, which can increase the risk of operational failures or disorderly market conditions.

### 3. Market formation and liquidity conditions

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

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

### 4. Counterparty and service provider dependence

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

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

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

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

### 5. Operational and information risks

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

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

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

### **I.2 Issuer-related risks**

#### 1. Insolvency of the issuer

As with any commercial entity, the issuer may face insolvency risks. These may result from insufficient funding, low market interest, mismanagement, or external shocks (e.g. pandemics, armed conflicts). In such a case, ongoing development, support, and governance of the project may cease, potentially affecting the viability and tradability of the crypto-asset.

#### 2. Legal and regulatory risks

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

#### 3. Operational risks

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

#### 4. Governance and decision-making

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

#### 5. Reputational risks

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

#### 6. Counterparty dependence

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

### **I.3 Crypto-assets-related risks**

#### 1. Valuation risk

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

#### 2. Market volatility risk

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

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

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

#### 4. Crypto-asset security risk

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

#### 5. Fraud and scam risk

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

#### 6. Legal and regulatory reclassification risk

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

#### 7. Absence of investor protection

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

#### 8. Counterparty risk

Reliance on third-party exchanges, custodians, or intermediaries exposes holders to operational failures, insolvency, or fraud by 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.

### **1.4 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.

## **1.5 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 vulnerability risk

The smart contract that defines the crypto-asset's parameters or governs its transfers may contain coding errors or security vulnerabilities. Exploitation of such weaknesses can result in unintended token minting, permanent loss of funds, or disruption of token functionality. Even after external audits, undetected vulnerabilities may persist due to the immutable nature of deployed code.

### 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

Osmosis

#### S.4 Consensus Mechanism

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

Osmosis operates a Proof-of-Stake consensus mechanism based on the Cosmos SDK and CometBFT, formerly Tendermint Core. CometBFT provides Byzantine Fault Tolerant state-machine replication for application-specific blockchains and is designed to provide deterministic finality once the required validator voting threshold is reached.

Consensus participants are validators who bond OSMO, or receive delegated OSMO from third-party token holders. Validator voting power is determined by the amount of OSMO bonded to the validator, including delegated stake. Validators participate in block production and consensus by proposing blocks and signing votes.

The active validator set is limited by protocol parameters. Current public parameter data indicates a maximum active validator set of 100 validators, following governance changes that reduced the set from 120 to 100 to improve performance and reduce consensus overhead.

Consensus proceeds through proposal and voting rounds. A block is committed once more than two-thirds of the total validator voting power has signed the relevant pre-commit for that block. This provides immediate finality and avoids probabilistic forks, provided that less than one-third of total validator voting power behaves maliciously or fails.

Osmosis also uses slashing and jailing mechanisms to support validator accountability. Current public parameter data indicates a 5% slash for double-signing, no direct slash for downtime, and a downtime jail duration of one minute. Validators that fail operational requirements may be removed from the active validator set until they rejoin in accordance with protocol rules. Delegators are exposed to validator-related slashing risk through the validators to whom they delegate.

The following applies to Cosmos:

The Cosmos Hub operates a Proof-of-Stake (PoS) consensus mechanism based on CometBFT (formerly Tendermint consensus), a Byzantine Fault Tolerant (BFT) algorithm designed to provide fast finality and deterministic state replication.

Consensus participants are validators who bond the native crypto-asset ATOM as collateral and obtain voting power proportional to their bonded stake, including delegated ATOM from third parties. Validators participate in block production and consensus by proposing blocks and broadcasting cryptographic votes.

Consensus proceeds in rounds, each consisting of a block proposal, followed by two voting phases (pre-vote and pre-commit). A block is finalised and irreversibly committed once more than two-thirds of the total validator voting power pre-commits to the same block in the same round. This mechanism provides immediate finality and prevents probabilistic forks.

CometBFT ensures Byzantine Fault Tolerance, meaning the network remains safe and consistent as long as less than one-third of total voting power behaves maliciously or fails. The Cosmos Hub maintains a bounded validator set, initially capped at 100 validators and designed to increase gradually over time to balance decentralisation and performance.

## **S.5 Incentive Mechanisms and Applicable Fees**

The crypto-asset in scope is implemented on the Osmosis and Cosmos networks following the standards described below.

The following applies to Osmosis:

### Validator and Delegator Rewards

Validators earn rewards from transaction fees and protocol emissions for their role in securing the network and processing transactions. Rewards are distributed in OSMO tokens. Delegators who stake their OSMO tokens with validators receive a proportional share of these rewards. New OSMO tokens are issued on an epoch basis (approximately once per day) and allocated in part to staking

rewards. The allocation of newly issued tokens is subject to protocol governance and may be adjusted over time.

### Liquidity Provider Incentives

Users providing liquidity to Osmosis pools earn swap fees generated by trading activity and may receive additional incentives in the form of OSMO tokens. These incentives are designed to support liquidity depth and trading efficiency on the protocol. The level and structure of such incentives may be adjusted through governance.

### Transaction Fees

Users pay transaction fees in OSMO tokens, or in certain whitelisted assets, for network activities including swaps, staking, and governance participation. These fees are distributed to validators and delegators, contributing to their ongoing economic incentives.

### Slashing and Penalties

To discourage malicious or negligent behaviour, the protocol employs a bonded Proof-of-Stake model in which validators' staked assets may be subject to slashing. Validators that engage in protocol violations, such as double-signing, may incur a reduction of their staked assets. Validators that fail to meet operational requirements, such as maintaining sufficient uptime, may be temporarily removed from the active validator set. Delegators are exposed to the risks associated with the validators to whom they delegate.

The following applies to Cosmos:

The Cosmos Hub secures its Proof-of-Stake consensus mechanism through an integrated system of economic incentives and penalties. This framework is designed to encourage honest participation by validators and delegators, deter malicious or negligent behaviour, and ensure the long-term security and sustainability of the network.

### Incentive Mechanisms (Rewards)

Validators and delegators are rewarded for participating in block production and consensus through a combination of inflationary issuance and transaction fees. The native staking crypto-asset ATOM is issued as an inflationary reward and distributed to bonded validators and delegators in proportion to their bonded stake. In addition, users pay transaction fees, which are collected by validators and periodically redistributed to bonded participants, subject to validator-defined commission rates.

### Transaction Fees

The Cosmos Hub applies a gas-based fee model to limit network spam and compensate network operators. Fees are calculated based on transaction complexity and size using a gas limit and a gas

price, and are deducted from the transaction signer prior to execution. Validators may set their own minimum gas prices and may accept multiple token denominations as fees, selecting which transactions to include within block gas limits.

#### Fee Distribution and Reserve Pool

Collected transaction fees are redistributed at regular intervals to bonded validators and delegators in proportion to their bonded ATOM. A predefined portion of these fees (by default 2%) is allocated to a reserve pool, which is intended to support network security and sustainability and may be distributed through on-chain governance decisions.

#### Penalties and Slashing

Bonded ATOM functions as economic collateral and is subject to slashing in the event of protocol violations. Validators that commit safety faults, such as double-signing conflicting blocks at the same height, are subject to significant slashing and are typically permanently removed from the validator set.

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

2025-05-20

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

2026-05-20

### **S.8 Energy consumption**

65180.91744 kWh/a

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

The energy consumption of this asset is aggregated across multiple components:

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 and we update the mappings regularly, based on data from 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.

To determine the energy consumption of a token, the energy consumption of the networks Cosmos and Osmosis is calculated first. For the energy consumption of the token, a fraction of the energy

consumption of the network is attributed to the token, which is determined based on the activity of the crypto-asset within the network. When calculating the energy consumption, the Functionally Fungible Group Digital Token Identifier (FFG DTI) is used - if available - to determine all implementations of the asset in scope. The mappings are updated 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**

29.2044733981 %

### **S.11 Energy intensity**

0.00014 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**

21.69306 tCO<sub>2</sub>e/a

### **S.14 GHG intensity**

0.00003 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.

