Cardano ADA (ADA) ESG Disclosure

Reporting period: 2024-06-09 to 2025-06-09

ESG (Environmental, Social, and Governance) regulations for crypto assets aim to address their environmental impact (e.g., energy-intensive mining), promote transparency, and ensure ethical governance practices to align the crypto industry with broader sustainability and societal goals. These regulations encourage compliance with standards that mitigate risks and foster trust in digital assets.

General Information

Name	Coinmotion Oy
Relevant legal entity identifier	743700PZG5RRF7SA4Q58
Name of the crypto-asset	Cardano ADA
Consensus Mechanism	Cardano uses the Ouroboros consensus mechanism, a Proof of Stake (PoS) protocol designed for scalability, security, and energy efficiency. Here's a detailed explanation: Core Concepts: 1. Proof of Stake (PoS): Validators (called slot leaders) are selected based on the amount of ADA they have staked, rather than solving complex computational puzzles. Validators propose and validate blocks, which are added to the blockchain. 2. Epochs and Slot Leaders: Cardano divides time into epochs (fixed time periods), each of which is subdivided into slots. Slot leaders are selected for each slot to validate and propose blocks. Slot leaders are chosen randomly based on the amount of ADA staked. More stake increases the probability of being selected. Validators are responsible for confirming transactions during their slot and passing the block to the next slot leader. 3. Delegation and Staking Pools: ADA holders can delegate their tokens to staking pools, which increases the pool's chances of being selected to validate a block. The pool operator and delegators share the rewards based on their stakes. This system ensures that participants who do not want to operate a full validator node can still earn rewards and contribute to network security by supporting trusted staking pools. 4. Security and Adversary Resistance: Ouroboros ensures security even in the presence of potential attacks. It assumes that adversaries may attempt to propagate alternative chains or send arbitrary messages. The protocol is secure as long as more than 51% of the staked ADA is controlled by honest participants. Settlement Delay: To protect against adversarial attacks, the new slot leader must consider the last few blocks as transient. Only the blocks preceding these are treated as finalized, ensuring that chain finality is secure against manipulation attempts. This mechanism also allows participants to temporarily go offline and resynchronize as long as they are not disconnected for more than the settlement delay period. 5. Chain Selection: Cardano's nodes adopt the longest valid chain rule: each node stores a local copy of the blockchain and replaces it with any discovered valid, longer chain. This ensures that all nodes eventually converge on a single version of the blockchain, maintaining network consistency.
Incentive Mechanisms and Applicable Fees	Cardano uses incentive mechanisms to ensure network security and decentralization through staking rewards, slashing mechanisms, and transaction fees. Incentive Mechanisms to Secure Transactions: 1. Staking Rewards: - Validators, known as slot leaders, secure the network by validating transactions and creating new blocks. To participate, validators must stake ADA, and those with larger stakes are more likely to be selected as slot leaders. - Validators are rewarded with newly minted ADA and transaction fees for successfully producing blocks and validating transactions. - Delegators, who may not wish to run a validator node, can delegate their ADA to staking pools. By doing so, they contribute to the network's security and earn a share of the rewards earned by the pool. The rewards are distributed proportionally based on the amount of ADA delegated. 2. Slashing Mechanism: - To prevent malicious behavior, Cardano employs a slashing mechanism. Validators who act dishonestly, fail to validate transactions properly, or produce incorrect blocks face penalties that involve the slashing of a portion of their staked ADA. - This provides strong economic incentives for validators to act honestly and ensures the network's integrity and security. 3. Delegation and Pool Operation: - Staking pools can charge operation fees (a margin on rewards) to maintain their infrastructure. This includes fixed costs set by pool operators. Delegators earn rewards after pool fees are deducted, providing a

	balanced incentive for both operators and delegators to participate actively. - Rewards are distributed at the end of each epoch, where staking pool performance and participation determine the distribution of ADA rewards to all stakeholders. Applicable Fees: 1. Transaction Fees: - Transaction fees on Cardano are paid in ADA and are generally low. They are calculated based on the size of the transaction and the network's current demand. These fees are paid to validators for including transactions in new blocks. - The fee formula is: a + b × size, where a is a constant (typically 0.155381 ADA), b is a coefficient related to the transaction size (0.000043946 ADA/byte), and size refers to the transaction size in bytes. This ensures that the fee adapts based on network load and the size of each transaction. 2. Staking Pool Fees: - Staking pool operators charge operational costs and a margin fee, which covers the cost of running and maintaining the staking pool. These fees vary between pools but ensure that operators can continue to provide their services while offering rewards to delegators. - After the operator's fee, the remaining rewards are distributed among the delegators based on the size of their stake.
Beginning of the period	2024-06-09
End of the period	2025-06-09

Environmental Indicators

Energy consumption	**813103.20000 (kWh/a)**
Energy consumption resources and methodologies	For the calculation of energy consumptions, the so called "bottom-up" approach is being used. The nodes are considered to be the central factor for the energy consumption of the network. These assumptions are made on the basis of empirical findings through the use of public information sites, open-source crawlers and crawlers developed in-house. The main determinants for estimating the hardware used within the network are the requirements for operating the client software. The energy consumption of the hardware devices was measured in certified test laboratories. When calculating the energy consumption, we used - if available - the Functionally Fungible Group Digital Token Identifier (FFG DTI) to determine all implementations of the asset of question in scope and we update the mappings regulary, based on data of the Digital Token Identifier Foundation.
Renewable energy consumption	**26.193130502**
Energy intensity	0.00027 (kWh)
Scope 1 DLT GHG emissions - Controlled	0.00000 (tCO2e/a)
Scope 2 DLT GHG emissions - Purchased	273.81815 (tCO2e/a)
GHG intensity	0.00009 (kgCO2e)
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 incentivization 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
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 incentivization 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 Licenced under CC BY 4.0

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