Dogecoin (DOGE) 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	Dogecoin
Consensus Mechanism	Dogecoin (DOGE) uses a Proof of Work (PoW) consensus mechanism, similar to Bitcoin, but with some key differences. Core Concepts 1. Nodes and Miners: Nodes: Nodes in the Dogecoin network are computers running the Dogecoin software. They validate transactions, maintain the blockchain, and relay information across the network. Miners: Miners are specialized nodes that solve cryptographic puzzles to create new blocks and validate transactions. This process is known as mining. 2. Blockchain: The blockchain is a public ledger that records all Dogecoin transactions in a series of blocks. Each block contains a list of transactions, a reference to the previous block (hash), a timestamp, and a nonce (a random number used once). 3. Hash Functions: Dogecoin uses the Scrypt hash function, which is different from Bitcoin's SHA-256. Scrypt is designed to be more memory-intensive, making it more resistant to ASIC (Application-Specific Integrated Circuit) mining and encouraging more widespread participation by regular users with less powerful hardware. Consensus Process 1. Transaction Validation: Transactions are broadcast to the network and collected by miners into a block. Each transaction is validated by nodes to ensure it adheres to the network's rules, such as correct signatures and sufficient funds. 2. Mining and Block Creation: Nonce and Hash Puzzle: Miners compete to find a nonce that, when combined with the block's data and passed through the Scrypt hash function, produces a hash below a certain target value. This target value is adjusted periodically to maintain a consistent block creation time. Proof of Work: Finding a valid nonce requires significant computational effort. Once a miner finds a valid nonce, the new block is broadcast to the network. 3. Block Validation and Addition: Other nodes in the network verify the new block to ensure the hash is correct and that all transactions within the block are valid. If the block is valid, nodes add it to their copy of the blockchain, and the process repeats for the next block. 4. Chain Consensus: The longest chain (the chain with the most accumulated proof of work) is considered the valid chain by the network. Nodes always work to extend the longest valid chain. In the case of multiple valid chains (forks), the network will eventually resolve the fork by continuing to mine and extending one chain until it becomes longer. Security and Economic Incentives 1. Incentives for Miners: Block Rewards: Miners are incentivized to participate in the network by receiving block rewards. Initially, Dogecoin had a variable block reward, but now it offers a fixed reward of 10,000 DOGE per block. Transaction Fees: Miners also collect transaction fees from the transactions included in the block. These fees provide an additional incentive for miners. 2. Security: Hash Rate and Difficulty: The security of the Dogecoin network is directly proportional to its hash rate, the total computational power of all miners. A higher hash rate means more difficult and costly attacks. 51% Attack: An attacker would need to control more than 50% of the network's hash rate to double-spend or rewrite parts of the blockchain. The cost and resource requirement for such an attack make it impractical for a sufficiently large and decentralized network like Dogecoin. 3. Merged Mining: Dogecoin supports merged mining with Litecoin (LTC). This means miners can mine both Dogecoin and Litecoin simultaneously without additional computational effort. This enhances the security of both networks by pooling their hash rates.
Incentive Mechanisms and Applicable Fees	Dogecoin uses a Proof of Work (PoW) consensus mechanism to ensure network security and integrity, relying on economic incentives for miners and transaction fees

	from users. Here’s an in-depth look at these mechanisms: Incentive Mechanisms 1. Miners: Block Rewards: Miners receive block rewards for successfully mining new blocks. Initially, Dogecoin had a variable block reward, but it now offers a fixed reward of 10,000 DOGE per block. These rewards are a primary incentive for miners to invest in the computational power necessary to secure the network. Transaction Fees: In addition to block rewards, miners also earn transaction fees from the transactions they include in the blocks they mine. Although Dogecoin’s transaction fees are typically low, they still provide an important supplementary income for miners. Merged Mining: Dogecoin supports merged mining with Litecoin, allowing miners to simultaneously mine both cryptocurrencies without additional computational effort. This process increases the hash rate and security of both networks by pooling their resources. 2. Security: Hash Rate and Difficulty: The security of Dogecoin’s network is directly related to its hash rate, the total computational power used by all miners. A higher hash rate makes the network more resistant to attacks. The mining difficulty adjusts periodically to ensure that blocks are mined approximately every minute, maintaining network stability. 51% Attack Deterrence: Controlling more than 50% of the network's hash rate to perform a 51% attack is costly and difficult. The significant computational power and energy required make such attacks impractical for a large and decentralized network like Dogecoin. Fees Applicable on the Dogecoin Blockchain 1. Transaction Fees: Flat Fee Structure: Dogecoin uses a relatively simple fee structure. The typical transaction fee is 1 DOGE per kilobyte of transaction data. This low fee is one of Dogecoin’s appeals, making it suitable for small and micro-transactions. Incentives for Faster Processing: Although transaction fees are generally low, users can choose to pay higher fees to incentivize miners to include their transactions in the next block, ensuring faster processing times. 2. Mining Rewards: Block Subsidy: The fixed block reward of 10,000 DOGE incentivizes miners to continue securing the network. This reward will persist as Dogecoin does not have a maximum supply cap, ensuring continuous incentives for miners. Fee Inclusion: Besides the block subsidy, the inclusion of transaction fees provides an additional, albeit smaller, incentive for miners to process transactions efficiently.
Beginning of the period	2024-06-09
End of the period	2025-06-09

Environmental Indicators

Energy consumption	**8766682930.51230 (kWh/a)**
Energy consumption resources and methodologies	For the calculation of energy consumptions, the so called “top-down” approach is being used, within which an economic calculation of the miners is assumed. Miners are persons or devices that actively participate in the proof-of-work consensus mechanism. The miners are considered to be the central factor for the energy consumption of the network. Hardware is pre-selected based on the consensus mechanism's hash algorithm: Scrypt. A current profitability threshold is determined on the basis of the revenue and cost structure for mining operations. Only Hardware above the profitability threshold is considered for the network. The energy consumption of the network can be determined by taking into account the distribution for the hardware, the efficiency levels for operating the hardware and on-chain information regarding the miners' revenue opportunities. If significant use of merge mining is known, this is taken into account. 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	**24.134702976**
Energy intensity	0.64650 (kWh)
Scope 1 DLT GHG emissions - Controlled	0.00000 (tCO2e/a)
Scope 2 DLT GHG emissions - Purchased	3611838.83831 (tCO2e/a)
GHG intensity	0.26635 (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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