Bitcoin (BTC)

Mandatory information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism, published under Article 66(5) of Regulation (EU) 2023/1114 (MiCA) and Commission Delegated Regulation (EU) 2025/422.

Mandatory information

- V2.0 Last updated on: 20th October 2026
- Whitepaper link: https://bitcoin.org/bitcoin.pdf

Code	Field	Content	Source
S.1	Name	Payhound Limited	
S.2	Relevant legal entity identifier	9845001DD90AF543DC90	
S.3	Name of the crypto-asset	Bitcoin (BTC)	
S.4	Consensus mechanism	Bitcoin uses Proof-of-Work (PoW) to reach consensus without a central authority. Miners compete to produce valid blocks by solving a computational puzzle, while full nodes independently verify the transactions and proof of work. When multiple valid chains exist, nodes follow the chain with the greatest cumulative proof of work. This allows the decentralized network to agree on the accepted history of transactions and helps prevent double-spending.	R0
S.5	Incentive mechanisms and applicable fees	Bitcoin miners receive rewards from two sources: newly created	R0

		bitcoin and transaction fees. The block subsidy began at 50 BTC and is reduced by half every 210,000 blocks, following Bitcoin's fixed issuance schedule. In addition, miners collect the fees attached to transactions included in their blocks. As the block subsidy decreases over time, transaction fees are expected to become an increasingly important part of miners' incentives.	
S.6	Beginning of the period to which the disclosure relates	2025-01-01	—
S.7	End of the period to which the disclosure relates	2025-12-31	—
S.8	Energy consumption (kWh per year)	~190 TWh/year (190 billion kWh), annualized estimate	R7
S.9	Energy consumption sources and methodologies	Figure taken from preliminary results of the second Cambridge Digital Mining Industry Report, presented by CCAF in July 2026. It is the network's annualised electricity demand in December 2025, based on a survey of miners representing a little over half of global hashrate. Demand rose through the year (from 138 TWh annualised in June 2024), so this December rate is above actual January–December 2025 consumption. It is used as a conservative	R4, R5, R6

		upper estimate. Scope: Bitcoin base-layer (on-chain) mining only; Lightning Network energy use is not included.	

Supplementary key indicators on energy and GHG emissions

Code	Field	Value	How Derived	Source
S.10	Renewable energy consumption (% of total energy used per year)	42.6%	Cambridge has not yet published a renewables-only share for 2025. Its preliminary low-carbon share is 59.4%, but that includes nuclear. The last published renewables-only share (42.6%) is used as a conservative lower bound.	R4, R7
S.11	Energy intensity (kWh per validated transaction)	1,236	190,000,000,000 kWh ÷ 153,685,518 on-chain transactions in 2025	R6, R7
S.12	Scope 1 DLT GHG emissions – controlled (t CO2eq per year)	0	Not separately estimated in the source; see S.16	R6
S.13	Scope 2 DLT GHG emissions – purchased (t CO2eq per year)	48,000,000	Cambridge preliminary estimate of network-wide GHG emissions	R6

			(about 48 MtCO2e)	
S.14	GHG intensity (kg CO2eq per validated transaction)	312	48,000,000,000 kg ÷ 153,685,518 on-chain transactions in 2025	R6, R7

Intensity figures (S.11, S.14) count on-chain transactions only. Including Lightning Network payments would lower them substantially, but no public source reports a reliable Lightning transaction count. Because S.8 and S.13 are December 2025 annualised rates, S.11 and S.14 are also upper estimates.

Sources and methodologies

Code	Field	Content
S.15	Key energy sources and methodologies	Energy consumption (S.8) comes from preliminary results of the second Cambridge Digital Mining Industry Report, presented by CCAF's Alexander Neumueller at the Energy Investors Forum and reported in July 2026 [R7]. The survey covered miners representing a little over half of global hashrate. It found low-carbon sources supplied 59.4% of the mining electricity mix, with hydropower now the largest single source; a per-source breakdown has not been released. The renewables-only share (S.10) therefore falls back to the first edition's 42.6% [R7]. CCAF's network model is described in the CBECI methodology [R8]. Energy intensity (S.11) divides S.8 by the 2025 on-chain transaction count from Coin Metrics [R9]. No offsetting or market-based instruments are applied.

References

1. **R0 -** Github, Bitcoinbook — Bitcoin overview
2. **R1** – Nakamoto, S. (2008), Bitcoin: A Peer-to-Peer Electronic Cash System.
3. **R2**– Bitcoin Core, chainparams.cpp (subsidy halving interval of 210,000 blocks; difficulty retarget parameters).

4. **R36** – Coin Metrics, btc.csv, daily metrics IssTotNtv ÷ BlkCnt: new issuance per block fell from 6.25 BTC (18 April 2024) to 3.125 BTC (20 April 2024 onward), confirming the fourth halving (retrieved 23 September 2026).
5. **R4** – Neumueller, Pieters, Mohaddes, Rousseau, Zhang (CCAF), Cambridge Digital Mining Industry Report: Global Operations, Sentiment, and Energy Use, 28 April 2025. Also on SSRN.
6. **R5** – CCAF, Cambridge Bitcoin Electricity Consumption Index: Methodology.
7. **R6** – Coin Metrics, Community Data, file btc.csv, daily metric TxCnt summed from 2025-01-01 to 2025-12-31: 153,685,518 on-chain transactions (retrieved 23 September 2026). Cross-check: Blockchain.com, Confirmed Transactions Per Day.
8. **R7** – TheEnergyMag, Bitcoin Power Use Jumps 38% with Greener Energy Mix: Report, 25 July 2026 (CCAF preliminary results: 190 TWh annualised in December 2025, about 48 MtCO2e, 59.4% low-carbon).