Solana (SOL)

Mandatory information on principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism.

Indicator Code	Field Name	Content
S.1	Name	Payhound Limited
S.2	Relevant legal entity identifier	9845001DD90AF543DC90
S.3	Crypto-Asset Name	Solana (SOL)
S.4	Consensus Mechanism	Proof-of-Stake (PoS)
S.4	Incentive Mechanisms and Applicable Fees	A Proof-of-Stake (PoS) consensus system motivates validators to help secure the blockchain and verify transactions by requiring them to lock up their own cryptocurrency as collateral. Instead of relying on computing power, validators are chosen to add new blocks based on how much crypto they have staked. Honest participants are rewarded with transaction fees, while those who behave dishonestly or attempt to add invalid blocks risk losing a portion of their staked funds. This built-in economic penalty helps prevent misconduct and maintains the integrity of the network. Applicable fees include transaction (gas) fees paid by users, variable based on network throughput.
S.6	Start of Reporting Period	2024-01-01
S.7	End of Reporting Period	2024-12-31
S.8	Energy Consumption (kWh/year)	8,755,000 kWh/year
S.9	Energy consumption sources and Methodologies	Solana energy estimates are drawn from the Solana Foundation's publicly accessible energy dashboard maintained with the Crypto Carbon Ratings Institute, projecting ~8.76 GWh/year in 2024. Energy per transaction (~0.00412 Wh) is sourced from Solana's 2024 energy use report comparing average transaction energy to everyday activities. Carbon emissions (~2,672 tCO_2e/year) reflect data from Solana's December 2023 report including both electricity use and offsets. Emission factors (~180 gCO_2/kWh) are based on validator hosting region electricity mix data and

Indicator Code	Field Name	Content
		compared to global averages via empirical validator network studies. Transition and offset commitments (S.18, S.21) derive from Solana Foundation statements and reports about achieving carbon neutrality via verified on-chain credits .
S.10	Renewable Energy consumption (percentage of the total amount of energy used per calendar year)	~45–55%
S.11	Energy Intensity (energy used per validated transaction in kWh)	~0.000004–0.000008
S.12	Scope 1 DLT GHG emissions – Controlled (in t CO2eq per year)	0
S.13	Scope 2 DLT GHG emissions – Purchased (in t CO2eq per year) 7	~2,671
S.14	GHG Intensity (emissions per validated transaction in kg CO2eq)	~0.0000013
S.15	Key energy sources and methodologies	Validators' electricity use tracked via Solana Foundation and CCRI, reported as ~8,484 MWh/year (source). Energy intensity derived from per-transaction measurement (~0.004–0.008 Wh/tx) (source). Renewable share computed by merging validator geolocation data with national renewable energy shares (Our World in Data, Ember, Energy Institute, IEA, EEA).
S.16	Key GHG sources and methodologies	Scope 1: 0 t CO_2eq (no controlled generation). Scope 2: Based on location-weighted electricity usage × relevant grid emission factors. Emissions derived from CCRI/Solana Foundation's annual carbon footprint (~2,671 t CO_2eq) . No offsets are included in these figures despite Solana's voluntary initiatives. Carbon intensities across regions sourced from Ember, IEA, EEA, and national grid data.