Sustainability indicators for crypto-assets

Disclosures pursuant to Article 66(5) MiCA

Report date	20 April 2026
Publication date	5 June 2026
Reference period	20 April 2025 – 20 April 2026
Last review/update	5 June 2026
Next scheduled review	No later than 5 June 2027
Data provider	Internal
Responsible CASP	SMART VALOR AG Liechtenstein

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Introduction

About the company

Name of the company	SMART VALOR AG Liechtenstein
Address	Industriering 3, 9491 Ruggell, Liechtenstein
Registration / legal entity identifier	FL-0002.596.088-9 / 254900S56908SP1E8O53
Website	https://smartvalor.com/

About this report

This disclosure serves as evidence of compliance with the regulatory requirements of Article 66(5) of Regulation (EU) 2023/1114 (MiCA). Under this provision, crypto-asset service providers are required to disclose information on the principal adverse impacts on the climate and other environment-related adverse impacts of the consensus mechanism used to issue each crypto-asset for which they provide services.

In particular, this disclosure follows Commission Delegated Regulation (EU) 2025/422 of 17 December 2024 supplementing Regulation (EU) 2023/1114 with regard to regulatory technical standards specifying the content, methodologies and presentation of information in respect of sustainability indicators in relation to adverse impacts on the climate and other environment-related adverse impacts.

This report remains valid until material changes occur in the underlying data, in which case it will be updated promptly.

Mandatory quantitative sustainability indicators are presented for each crypto-asset below. For crypto-assets that are issued as tokens on a host network rather than on a dedicated distributed ledger, only the energy-consumption indicator (S.8) is reported, in line with the available data.

Where a quantified value is based on an estimate rather than a directly published asset-specific energy-consumption figure, the value is marked as “estimated” and the relevant sources, methodology, assumptions and limitations are described in the “Energy consumption sources and methodologies” section for that crypto-asset. Where no quantified, methodology-based value or reasonable estimate is available for an asset, the indicator is reported as “No data available”.

Basis of preparation, data sources and third-party verification

This report was prepared internally by SMART VALOR AG Liechtenstein. SMART VALOR AG Liechtenstein did not engage an external sustainability data provider, external expert, auditor or independent verifier to prepare, calculate, verify or assure the information contained in this report.

The information in this report is based on publicly available sources and internal best-effort analysis. Publicly available sources may include, depending on the relevant crypto-asset and network, crypto-asset white papers where available, official protocol and project documentation, public blockchain and network data, public block explorers and network statistics, Digital Token Identifier Foundation data, publicly available electricity mix and greenhouse gas intensity datasets, and other public research or sustainability information.

Where information was not directly or readily available, SMART VALOR AG Liechtenstein used estimates based on reasonable assumptions, conservative allocation methods and best-effort research. Estimated values are identified as estimates in the relevant sections of this report or are apparent from the methodology description. Such estimates do not represent direct measurements by SMART VALOR AG Liechtenstein.

The quantitative indicators in this report have not been independently assured or verified. SMART VALOR AG Liechtenstein remains responsible for the publication of this disclosure pursuant to Article 66(5) MiCA and Commission Delegated Regulation (EU) 2025/422.

The methodology, assumptions and source categories used for the calculations are described in the relevant “Sources and methodologies” sections. SMART VALOR AG Liechtenstein retains an internal source and calculation file documenting the public sources reviewed, retrieval dates, assumptions and calculations used for the preparation of this report.

Network scope

This report covers the crypto-assets and network implementations for which SMART VALOR AG Liechtenstein provides crypto-asset services during the reference period. Where a crypto-asset exists on multiple networks, only the network implementation(s) supported by SMART VALOR AG Liechtenstein are included, unless expressly stated otherwise.

Limitations

Due to the decentralised nature of distributed ledger technologies, complete and directly measured data on the energy consumption, geographic distribution of nodes or validators, hardware used by network participants, renewable energy use and greenhouse gas emissions may not be publicly available for all crypto-assets and networks. In such cases, SMART VALOR AG Liechtenstein has used reasonable assumptions and conservative estimates based on publicly available information. The figures in this report should therefore be read as best-effort sustainability indicators prepared for the purposes of Article 66(5) MiCA, rather than as independently measured or assured environmental data.

Optional information

The optional information referred to in Article 6(8)(a) to (d) of Commission Delegated Regulation (EU) 2025/422 is not included in this report unless expressly stated otherwise.

Overview

This is an overview of the core indicator "energy consumption" for the crypto-assets in scope and does not, by itself, constitute the disclosure required under Article 66(5) MiCA. The full disclosure for each crypto-asset is set out in the following section. Crypto-assets are listed in alphabetical order.

#	Token	Crypto-Asset Name	Crypto-Asset FFG	Energy consumption (kWh / calendar year)
1	**1INCH**	1INCH Token	SVRFHQRZN	414.60098
2	**AAVE**	Aave Token	H618RN577	5,494.50723
3	**ADA**	Cardano ADA	76QS7QCXB	773,945.90000
4	**ALGO**	Algorand	K8S6W74KS	420,961.79223
5	**ARB**	Arbitrum	44TP35HF9	647.31888
6	**BCH**	Bitcoin Cash	919BF3W7L	667,825,344.25247
7	**BTC**	Bitcoin	V15WLZJMF	139,547,581,180.97987
8	**COMP**	Compound	KCHF60NW7	759.51991
9	**CRV**	Curve DAO Token	P8DXFQ5LD	2,748.54323
10	**DOT**	Polkadot DOT	SGD9NLTRG	630,719.99356
11	**ETH**	Ethereum Eth	D5RG2FHH0	2,159,953.19223
12	**FET**	Fetch	HWBLGXNBX	294.33267
13	**LINK**	ChainLink Token	3R3J70FDR	4,111.66703
14	**LTC**	Litecoin	D74JZ1VRD	710,975,263.86024
15	**MKR**	Maker	SV17PZF24	161.46809
16	**NEAR**	NEAR Protocol	MXXM59Z0T	919,927.05939
17	**OP**	Optimism	9NRMM2RC4	982.14794
18	**PAXG**	Paxos Gold	RPGFC7GN3	4,489.26366
19	**POL**	Polygon POL	GB8DQ8DWN	96,111.80873
20	**SNX**	Synthetix Network	RSN26S0SB	212.24187
21	**SOL**	Solana SOL	6QZ1LNC12	6,843,749.99645
22	**UNI**	Uniswap	XMB84LZBZ	2,048.91965
23	**USDC**	USDC	TJWK5QTRK	473,792.99646
24	**VALOR**	Valor Token	Not available	50,000.00000[1]
25	**XLM**	Stellar Lumen	ZCN8SR2H7	52,559.99597
26	**XRP**	Ripple XRP	42PHJB2BS	456,267.92619

Note: No Functionally Fungible Group Digital Token Identifier (FFG DTI) for VALOR was identified at the date of preparation of this report. The Crypto-Asset FFG field is therefore shown as "Not available".

[1] The energy-consumption value for VALOR is an estimated value. No directly published asset-specific energy-consumption figure is available for Valor Token. The estimate is based on VALOR being implemented on the Ethereum network and on a conservative allocation of Ethereum network energy consumption to VALOR-related activity. Further information is provided in the VALOR section under S.9.

Sustainability indicators

1INCH — 1INCH Token

FFG DTI: SVRFHQRZN

Quantitative information

Quantitative sustainability indicators for 1INCH Token

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**1INCH Token**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**414.60098**	kWh/a

Qualitative information

S.4 Consensus Mechanism

1INCH Token is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, 1INCH Token relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

SMART VALOR

AAVE — Aave Token

FFG DTI: H618RN577

Quantitative information

Quantitative sustainability indicators for Aave Token

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Aave Token**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**5494.50723**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Aave Token is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Aave Token relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

ADA — Cardano ADA

FFG DTI: 76QS7QCXB

Quantitative information

Quantitative sustainability indicators for Cardano ADA

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Cardano ADA**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**773945.90000**	kWh/a
S.10 Renewable energy consumption	**37.4187578605**	%
S.11 Energy intensity	**0.00109**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**260.63169**	tCO2e
S.14 GHG intensity	**0.00037**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Core Components: Cardano uses the Ouroboros consensus mechanism, a Proof of Stake (PoS) protocol designed for scalability, security, and energy efficiency.

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.

S.5 Incentive Mechanisms and Applicable Fees

Cardano uses incentive mechanisms to support network security and decentralisation through staking rewards, delegation, stake pool operation and transaction fees. Cardano does not use slashing of delegated ADA in the same manner as some other Proof-of-Stake networks.
Incentive Mechanisms to Secure Transactions:
1. Staking Rewards:
– Stake pool operators participate in the production and validation of blocks. Rewards are earned when stake pools perform successfully in accordance with the protocol rules.
– Delegators who do not wish to operate a stake pool may delegate their ADA to a stake pool. Delegated ADA remains under the control of the delegator and does not leave the delegator’s wallet.
– Delegators may earn a share of the rewards earned by the stake pool, after applicable pool fees and parameters.
2. No Slashing of Delegated ADA:
– Cardano does not apply slashing of delegated ADA. Delegators do not lose delegated ADA as a slashing penalty for validator or stake pool behaviour.
– Poor stake pool performance may result in reduced or no rewards, and delegators are incentivised to select reliable stake pools.
3. Delegation and Pool Operation:
– Stake pool operators may charge fixed and variable fees, including a margin on rewards, to cover the cost of operating and maintaining the stake pool.
– Rewards are distributed in accordance with the protocol rules, stake pool performance, pool parameters and the amount of ADA delegated.
Applicable Fees:
1. Transaction Fees:
– Transaction fees on Cardano are paid in ADA. They are generally calculated based on transaction size and applicable protocol parameters.
– These fees support the operation of the network and are included in the protocol’s reward and fee mechanism.
2. Stake Pool Fees:
– Stake pool operators may charge operational costs and a margin fee. After applicable fees, the remaining rewards are distributed among delegators based on their delegated stake and the applicable protocol rules.

S.9 Energy consumption sources and methodologies

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.

Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

ALGO — Algorand

FFG DTI: K8S6W74KS

Quantitative information

Quantitative sustainability indicators for Algorand

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Algorand**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**420961.79223**	kWh/a

Qualitative information

S.4 Consensus Mechanism

The Algorand blockchain utilizes a consensus mechanism termed Pure Proof-of-Stake (PPoS). Consensus, in this context, describes the method by which blocks are selected and appended to the blockchain. Algorand employs a verifiable random function (VRF) to select leaders who propose blocks for each round.

Upon block proposal, a pseudorandomly selected committee of voters is chosen to evaluate the proposal. If a supermajority of these votes are from honest participants, the block is certified. What makes this algorithm a Pure Proof of Stake is that users are chosen for committees based on the number of algos in their accounts. This system leverages random committee selection to maintain high performance and inclusivity within the network.

The consensus process involves three stages:

1. Propose: A leader proposes a new block.

2. Soft Vote: A committee of voters assesses the proposed block.

3. Certify Vote: Another committee certifies the block if it meets the required honesty threshold.

S.5 Incentive Mechanisms and Applicable Fees

Algorand's consensus mechanism, Pure Proof-of-Stake (PPoS), relies on the participation of ALGO holders and participation nodes to support network security, integrity and performance.
Incentive Mechanisms:
1. Participation and Staking Rewards:
– Eligible participants may earn rewards for participating in consensus in accordance with the applicable Algorand protocol rules.
– Participation nodes support the consensus process by proposing and voting on blocks. Rewards are designed to incentivise reliable participation and network availability.
– Algorand does not apply slashing of staked ALGO. Ineffective or non-performing nodes may fail to earn rewards or may be removed from consensus participation rather than having ALGO confiscated as a slashing penalty.
2. No Mandatory Slashing-Based Lock-Up:
– ALGO used for participation is not subject to a slashing-based security deposit in the manner used by certain other Proof-of-Stake networks.
– Participants remain incentivised to operate reliably through reward eligibility, performance requirements and the risk of forgoing rewards if they do not participate effectively.
Applicable Fees:
1. Transaction Fees:
– Transaction fees on Algorand are paid in ALGO. Algorand uses a low-fee model, with fees designed to support network operation and prevent spam.

– Transaction fees vary depending on transaction type and network parameters.
2. Smart Contract and Asset-Related Fees:
– Executing smart contracts, creating assets and performing other network operations may require fees in ALGO, based on the applicable protocol rules and resource usage.

S.9 Energy consumption sources and methodologies

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.

ARB — Arbitrum

FFG DTI: 44TP35HF9

Quantitative information

Quantitative sustainability indicators for Arbitrum

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Arbitrum**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**647.31888**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Arbitrum is present on the Arbitrum network.

Arbitrum is a Layer 2 solution on top of Ethereum that uses Optimistic Rollups to enhance scalability and reduce transaction costs. It assumes that transactions are valid by default and only verifies them if there's a challenge (optimistic).

Core Components:

- Sequencer: Orders transactions and creates batches for processing.
- Bridge: Facilitates asset transfers between Arbitrum and Ethereum.
- Fraud Proofs: Protect against invalid transactions through an interactive verification process.

Verification Process:

1. Transaction Submission: Users submit transactions to the Arbitrum Sequencer, which orders and batches them.
2. State Commitment: These batches are submitted to Ethereum with a state commitment.
3. Challenge Period: Validators have a specific period to challenge the state if they suspect fraud.
4. Dispute Resolution: If a challenge occurs, the dispute is resolved through an iterative process to identify the fraudulent transaction. The final operation is executed on Ethereum to determine the correct state.
5. Rollback and Penalties: If fraud is proven, the state is rolled back, and the dishonest party is penalized.

Security and Efficiency: The combination of the Sequencer, bridge, and interactive fraud proofs ensures that the system remains secure and efficient. By minimizing on-chain data and leveraging off-chain computations, Arbitrum can provide high throughput and low fees.

S.5 Incentive Mechanisms and Applicable Fees

Arbitrum is present on the Arbitrum network.

Arbitrum One, a Layer 2 scaling solution for Ethereum, employs several incentive mechanisms to ensure the security and integrity of transactions on its network. The key mechanisms include:

1. Validators and Sequencers:
   - Sequencers are responsible for ordering transactions and creating batches that are processed off-chain. They play a critical role in maintaining the efficiency and throughput of the network.
   - Validators monitor the sequencers' actions and ensure that transactions are processed correctly. Validators verify the state transitions and ensure that no invalid transactions are included in the batches.

2. Fraud Proofs:

- Assumption of Validity: Transactions processed off-chain are assumed to be valid. This allows for quick transaction finality and high throughput.
- Challenge Period: There is a predefined period during which anyone can challenge the validity of a transaction by submitting a fraud proof. This mechanism acts as a deterrent against malicious behavior.
- Dispute Resolution: If a challenge is raised, an interactive verification process is initiated to pinpoint the exact step where fraud occurred. If the challenge is valid, the fraudulent transaction is reverted, and the dishonest actor is penalized.

3. Economic Incentives:

- Rewards for Honest Behavior: Participants in the network, such as validators and sequencers, are incentivized through rewards for performing their duties honestly and efficiently. These rewards come from transaction fees and potentially other protocol incentives.
- Penalties for Malicious Behavior: Participants who engage in dishonest behavior or submit invalid transactions are penalized. This can include slashing of staked tokens or other forms of economic penalties, which serve to discourage malicious actions.

Fees on the Arbitrum One Blockchain

1. Transaction Fees:

- Layer 2 Fees: Users pay fees for transactions processed on the Layer 2 network. These fees are typically lower than Ethereum mainnet fees due to the reduced computational load on the main chain.
- Arbitrum Transaction Fee: A fee is charged for each transaction processed by the sequencer. This fee covers the cost of processing the transaction and ensuring its inclusion in a batch.

2. L1 Data Fees:

- Posting Batches to Ethereum: Periodically, the state updates from the Layer 2 transactions are posted to the Ethereum mainnet as calldata. This involves a fee, known as the L1 data fee, which accounts for the gas required to publish these state updates on Ethereum.
- Cost Sharing: Because transactions are batched, the fixed costs of posting state updates to Ethereum are spread across multiple transactions, making it more cost-effective for users.

S.9 Energy consumption sources and methodologies

The S.8 energy-consumption value is based on publicly available information and/or SMART VALOR AG Liechtenstein’s internal best-effort estimate. No third-party sustainability data provider or independent verifier was engaged for the calculation or verification of this value.

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

To determine the energy consumption of a token, the energy consumption of the Arbitrum network 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.

BCH — Bitcoin Cash

FFG DTI: 919BF3W7L

Quantitative information

Quantitative sustainability indicators for Bitcoin Cash

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Bitcoin Cash**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**667825344.25247**	kWh/a
S.10 Renewable energy consumption	**34.4781471084**	%
S.11 Energy intensity	**0.05180**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**275141.41232**	tCO2e
S.14 GHG intensity	**0.02134**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Bitcoin Cash is present on the Bitcoin Cash network.

The Bitcoin Cash blockchain network uses a consensus mechanism called Proof of Work (PoW) to achieve distributed consensus among its nodes. It originated from the Bitcoin blockchain, hence has the same consensus mechanisms but with a larger block size, which makes it more centralized.

Core Concepts:

1. Nodes and Miners:
- Nodes: Nodes are computers running the Bitcoin Cash software that participate in the network by validating transactions and blocks.
- Miners: Special nodes, called miners, perform the work of creating new blocks by solving complex cryptographic puzzles.

2. Blockchain: The blockchain is a public ledger that records all Bitcoin Cash 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: Bitcoin Cash uses the SHA-256 cryptographic hash function to secure the data in blocks. A hash function takes input data and produces a fixed-size string of characters, which appears random.

Consensus Process:

1. Transaction Validation: Transactions are broadcast to the network and collected by miners into a block. Each transaction must be validated by nodes to ensure it follows 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 SHA-256 hash function, produces a hash that is less than a target value. This target value is adjusted periodically to ensure that blocks are mined approximately every 10 minutes.

– Proof of Work: The process of finding this nonce is computationally intensive and requires significant energy and resources. Once a miner finds a valid nonce, they broadcast the newly mined block 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 starts again with 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.

S.5 Incentive Mechanisms and Applicable Fees

Bitcoin Cash is present on the Bitcoin Cash network.

The Bitcoin Cash blockchain operates on a Proof-of-Work (PoW) consensus mechanism, with incentives and fee structures designed to support miners and the overall network's sustainability:

Incentive Mechanism:

1. Block Rewards:

– Newly Minted Bitcoins: Miners receive a block reward, which consists of newly created bitcoins for successfully mining a new block. Initially, the reward was 50 BCH, but it halves approximately every four years in an event known as the "halving."

– Halving and Scarcity: The halving ensures that the total supply of Bitcoin Cash is capped at 21 million BCH, creating scarcity that could drive up value over time.

2. Transaction Fees:

– User Fees: Each transaction includes a fee, paid by users, that incentivizes miners to include the transaction in a new block. This fee market becomes increasingly important as block rewards decrease over time due to the halving events.

– Fee Market: Transaction fees are market-driven, with users competing to get their transactions included quickly. Higher fees lead to faster transaction processing, especially during periods of high network congestion.

Applicable Fees:

1. Transaction Fees: Bitcoin Cash transactions require a small fee, paid in BCH, which is determined by the transaction's size and the network demand at the time. These fees are crucial for the continued operation of the network, particularly as block rewards decrease over time due to halvings.

2. Fee Structure During High Demand: In times of high congestion, users may choose to increase their transaction fees to prioritize their transactions for faster processing. The fee structure ensures that miners are incentivized to prioritize higher-fee transactions.

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 '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: SHA-256. 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 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.

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

BTC — Bitcoin

FFG DTI: V15WLZJMF

Quantitative information

Quantitative sustainability indicators for Bitcoin

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Bitcoin**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**139547581180.97987**	kWh/a
S.10 Renewable energy consumption	**34.4781471084**	%
S.11 Energy intensity	**4.59329**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**57493053.81688**	tCO2e
S.14 GHG intensity	**1.89242**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Bitcoin is present on the Bitcoin network.

The Bitcoin blockchain network uses a consensus mechanism called Proof of Work (PoW) to achieve distributed consensus among its nodes. Here's a detailed breakdown of how it works:

Core Concepts:

1. Nodes and Miners:
   - Nodes: Nodes are computers running the Bitcoin software that participate in the network by validating transactions and blocks.
   - Miners: Special nodes, called miners, perform the work of creating new blocks by solving complex cryptographic puzzles.

2. Blockchain: The blockchain is a public ledger that records all Bitcoin 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: Bitcoin uses the SHA-256 cryptographic hash function to secure the data in blocks. A hash function takes input data and produces a fixed-size string of characters, which appears random.

Consensus Process:

1. Transaction Validation: Transactions are broadcast to the network and collected by miners into a block. Each transaction must be validated by nodes to ensure it follows 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 SHA-256 hash function, produces a hash that is less than a target value. This target value is adjusted periodically to ensure that blocks are mined approximately every 10 minutes.

- Proof of Work: The process of finding this nonce is computationally intensive and requires significant energy and resources. Once a miner finds a valid nonce, they broadcast the newly mined block 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 starts again with 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.

S.5 Incentive Mechanisms and Applicable Fees

Bitcoin is present on the Bitcoin network.

The Bitcoin blockchain relies on a Proof-of-Work (PoW) consensus mechanism to ensure the security and integrity of transactions. This mechanism involves economic incentives for miners and a fee structure that supports network sustainability:

Incentive Mechanisms:

1. Block Rewards:
   - Newly Minted Bitcoins: Miners are incentivized by block rewards, which consist of newly created bitcoins awarded to the miner who successfully mines a new block. Initially, the block reward was 50 BTC, but it halves every 210,000 blocks (approx. every four years) in an event known as the "halving."
   - Halving and Scarcity: The halving mechanism ensures that the total supply of Bitcoin is capped at 21 million, creating scarcity and potentially increasing value over time.
2. Transaction Fees:
   - User Fees: Each transaction includes a fee paid by the user to incentivize miners to include their transaction in a block. These fees are crucial, especially as the block reward diminishes over time due to halving.
   - Fee Market: Transaction fees are determined by the market, where users compete to have their transactions processed quickly. Higher fees typically result in faster inclusion in a block, especially during periods of high network congestion.

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 '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: SHA-256. 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 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.

To determine the energy consumption of a token, the energy consumption of the Bitcoin network 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

COMP — Compound

FFG DTI: KCHF60NW7

Quantitative information

Quantitative sustainability indicators for Compound

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Compound**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**759.51991**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Compound is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Compound relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

CRV — Curve DAO Token

FFG DTI: P8DXFQ5LD

Quantitative information

Quantitative sustainability indicators for Curve DAO Token

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Curve DAO Token**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**2748.54323**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Curve DAO Token is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Curve DAO Token relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

DOT — Polkadot DOT

FFG DTI: SGD9NLTRG

Quantitative information

Quantitative sustainability indicators for Polkadot DOT

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Polkadot DOT**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**630719.99356**	kWh/a
S.10 Renewable energy consumption	**39.0267442857**	%
S.11 Energy intensity	**0.00004**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**186.14368**	tCO2e
S.14 GHG intensity	**0.00001**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Polkadot DOT is present on the Polkadot network.

Polkadot, a heterogeneous multi-chain framework designed to enable different blockchains to interoperate, uses a sophisticated consensus mechanism known as Nominated Proof-of-Stake (NPoS). This mechanism combines elements of Proof-of-Stake (PoS) and a layered consensus model involving multiple roles and stages.

Core Components:

1. Validators: Validators are responsible for producing new blocks and finalizing the relay chain, Polkadot's main chain. They stake DOT tokens and validate transactions, ensuring the security and integrity of the network.
2. Nominators: Nominators delegate their stake to trusted validators, choosing which validators they believe will act honestly and effectively. They share in the rewards and penalties of the validators they nominate.
3. Collators: Collators maintain parachains (individual blockchains that connect to the Polkadot relay chain) by collecting transactions from users and producing state transition proofs for validators.
4. Fishermen: Fishermen monitor the network for malicious activity. They report bad behavior to the validators to help maintain network security.

Consensus Process: Polkadot's consensus mechanism operates through a combination of two key protocols: GRANDPA (GHOST-based Recursive Ancestor Deriving Prefix Agreement) and BABE (Blind Assignment for Blockchain Extension).

1. BABE (Block Production): BABE is the block production mechanism. It operates similarly to a lottery, where validators are pseudo-randomly assigned slots to produce blocks based on their stake. Each validator signs the blocks they produce, which are then propagated through the network.
2. GRANDPA (Finality): GRANDPA is the finality gadget that provides a higher level of security by finalizing blocks after they are produced. Unlike traditional blockchains where blocks are

considered final after a number of confirmations, GRANDPA allows for asynchronous finality. Validators vote on chains, and once a supermajority agrees, the chain is finalized instantly.

Detailed Steps:

1. Block Production (BABE):
- Slot Allocation: Validators are selected to produce blocks in specific time slots.
- Block Proposal: The selected validator for a slot proposes a block, including new transactions and state changes.

2. Block Propagation and Preliminary Consensus: Proposed blocks are propagated across the network, where other validators verify the correctness of the transactions and state transitions.

3. Finalization (GRANDPA):
- Voting on Blocks: Validators vote on the chains they believe to be the correct history.
- Supermajority Agreement: Once more than two-thirds of validators agree on a block, it is finalized.
- Instant Finality: This finality process ensures that once a block is finalized, it is irreversible and becomes part of the canonical chain.

4. Rewards and Penalties: Validators and nominators earn rewards for participating in the consensus process and maintaining network security. Misbehavior, such as producing invalid blocks or being offline, results in penalties, including slashing of staked tokens.

S.5 Incentive Mechanisms and Applicable Fees

Polkadot DOT is present on the Polkadot network.

Polkadot uses a consensus mechanism called Nominated Proof-of-Stake (NPoS), which involves a combination of validators, nominators, and a unique layered consensus process to secure the network:

Incentive Mechanisms:

1. Validators:
- Staking Rewards: Validators are responsible for producing new blocks and finalizing the relay chain. They are incentivized with staking rewards, which are distributed in proportion to their stake and their performance in the consensus process. Validators earn these rewards for maintaining uptime and correctly validating transactions.
- Commission: Validators can set a commission rate that they charge on the rewards earned by their nominators. This incentivizes them to perform well to attract more nominators.

2. Nominators:
- Delegation: Nominators stake their tokens by delegating them to trusted validators. They share in the rewards earned by the validators they support. This mechanism incentivizes nominators to carefully choose reliable validators.
- Rewards Distribution: The rewards are distributed among validators and their nominators based on the amount of stake contributed by each party. This ensures that both parties are incentivized to maintain the network's security.

3. Collators: Parachain Maintenance: Collators maintain parachains by collecting transactions and producing state transition proofs for validators. They are incentivized through rewards for their role in keeping the parachain operational and secure.

4. Fishermen: Monitoring: Fishermen are responsible for monitoring the network for malicious activities. They are rewarded for identifying and reporting malicious behavior, which helps maintain the network's security.

5. Economic Penalties:
- Slashing: Validators and nominators face penalties in the form of slashing if they engage in malicious activities such as double-signing or being offline for extended periods. Slashing results in the loss of a portion of their staked tokens, which serves as a strong deterrent against bad behavior.
- Unbonding Period: To withdraw staked tokens, participants must go through an unbonding period during which their tokens are still at risk of being slashed. This ensures continued network security even when validators or nominators decide to exit.

Fees on the Polkadot Blockchain:

1. Transaction Fees:
   - Dynamic Fees: Transaction fees on Polkadot are dynamic, adjusting based on network demand and the complexity of the transaction. This model ensures that fees remain fair and proportional to the network's usage.
   - Fee Burn: A portion of the transaction fees is burned (permanently removed from circulation), which helps to control inflation and can potentially increase the value of the remaining tokens.
2. Smart Contract Fees: Execution Costs: Fees for deploying and interacting with smart contracts on Polkadot are based on the computational resources required. This encourages efficient use of network resources.
3. Parachain Slot Auction Fees: Bidding for Slots: Projects that want to secure a parachain slot must participate in a slot auction. They bid DOT tokens, and the highest bidders win the right to operate a parachain for a specified period. This process ensures that only serious projects with significant backing can secure parachain slots, contributing to the network's overall quality and security.

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.

To determine the energy consumption of a token, the energy consumption of the Polkadot network 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.

Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.

The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.

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.

ETH — Ethereum Eth

FFG DTI: D5RG2FHH0

Quantitative information

Quantitative sustainability indicators for Ethereum Eth

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Ethereum Eth**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**2159953.19223**	kWh/a
S.10 Renewable energy consumption	**37.9124101186**	%
S.11 Energy intensity	**0.00007**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**718.86066**	tCO2e
S.14 GHG intensity	**0.00002**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

The crypto-asset's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG

Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

FET — Fetch

FFG DTI: HWBLGXNBX

Quantitative information

Quantitative sustainability indicators for Fetch

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Fetch**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**294.33267**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Fetch (FET) is present on the Fetch.ai network.

The Fetch.ai network is a Cosmos SDK-based blockchain that uses a Proof-of-Stake (PoS) consensus mechanism with Tendermint Byzantine Fault Tolerant (BFT) consensus. Validators participate in block proposal and validation by staking FET, or by receiving delegated FET from token holders. Validators are selected and weighted based on the amount of FET staked or delegated to them, and they participate in the consensus protocol by signing and broadcasting votes for new blocks.

This consensus mechanism enables the network to validate transactions and achieve finality without energy-intensive mining. The Fetch.ai network is interoperable with other Cosmos-based networks through the Inter-Blockchain Communication (IBC) protocol. FET also exists, where applicable, as an ERC-20 token on Ethereum; however, this disclosure covers the implementation(s) of FET supported by SMART VALOR.

S.5 Incentive Mechanisms and Applicable Fees

The Fetch.ai network uses staking rewards, validator commissions, transaction fees and economic penalties to incentivize honest participation and secure the network.

Validators are responsible for validating transactions, proposing and committing blocks, and maintaining the security and availability of the network. Validators may earn rewards for their participation, including block rewards and transaction fees. Token holders may delegate FET to validators and receive a share of the staking rewards generated by those validators, subject to the applicable validator commission.

Users pay transaction fees in FET for transactions on the Fetch.ai network, including transfers, staking-related transactions and other supported network operations. Validators may be penalized for malicious behaviour, double-signing, or prolonged downtime, including through slashing or temporary exclusion from active validation. These mechanisms are designed to align economic incentives with the correct and reliable operation of the network.

Where FET is transferred as an ERC-20 token on Ethereum, the applicable Ethereum fee mechanism applies to those transactions.

S.9 Energy consumption sources and methodologies

The S.8 energy-consumption value for Fetch is based on publicly available information and SMART VALOR AG Liechtenstein’s internal best-effort methodology. No third-party sustainability data provider or independent verifier was engaged for the calculation or verification of this value.
For the calculation of energy consumption, the so-called “bottom-up” approach is used. The nodes and validators are considered to be the central factors for the energy consumption of the Fetch.ai network. The assessment is based on publicly available information, including protocol

documentation, public network statistics, public validator or node information where available, published hardware specifications and other publicly available hardware energy-consumption information.
SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates.
When calculating the energy consumption, the Functionally Fungible Group Digital Token Identifier (FFG DTI) is used, if available, to determine the implementation(s) 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 and public sources. In general, participants are assumed to be largely economically rational. As a precautionary principle, assumptions are made on the conservative side when in doubt, i.e. making higher estimates for adverse impacts.

LINK — ChainLink Token

FFG DTI: 3R3J70FDR

Quantitative information

Quantitative sustainability indicators for ChainLink Token

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**ChainLink Token**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**4111.66703**	kWh/a

Qualitative information

S.4 Consensus Mechanism

ChainLink Token is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, ChainLink Token relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

LTC — Litecoin

FFG DTI: D74JZ1VRD

Quantitative information

Quantitative sustainability indicators for Litecoin

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Litecoin**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**710975263.86024**	kWh/a
S.10 Renewable energy consumption	**34.4781471084**	%
S.11 Energy intensity	**0.05100**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**292919.00965**	tCO2e
S.14 GHG intensity	**0.02101**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Litecoin, like Bitcoin, uses Proof of Work (PoW) as its consensus mechanism, but with a few key differences:

1. Scrypt Hashing Algorithm: Unlike Bitcoin's SHA-256 algorithm, Litecoin uses the Scrypt hashing algorithm, which is more memory-intensive. This makes mining Litecoin more accessible to regular users and limits the advantages of specialized hardware (like ASICs) in the early years.
2. Mining and Block Creation: Miners compete to solve cryptographic puzzles and, upon success, add new blocks to the blockchain. This process involves solving the Scrypt algorithm, which requires computational work. The first miner to solve the problem earns the block reward and transaction fees associated with the transactions in the block.
3. Block Time: Litecoin has a block time of 2.5 minutes, much faster than Bitcoin's 10 minutes. This means transactions confirm more quickly, increasing the overall network speed.
4. Block Reward Halving: Similar to Bitcoin, Litecoin has a block reward halving event approximately every four years. Initially, miners earned 50 LTC per block, but this reward decreases by half after each halving event. This process continues until the maximum supply of 84 million LTC is reached.
5. Difficulty Adjustment: Litecoin adjusts the mining difficulty approximately every 2,016 blocks (about every 3.5 days) to ensure that blocks continue to be mined at a consistent rate of 2.5 minutes per block, regardless of fluctuations in the total network hash rate.

S.5 Incentive Mechanisms and Applicable Fees

Litecoin, like Bitcoin, uses the Proof of Work (PoW) consensus mechanism to secure transactions and incentivize miners.

Incentive Mechanisms:

1. Mining Rewards: Block Rewards: Miners are rewarded with Litecoin (LTC) for successfully mining new blocks. Initially, miners received 50 LTC per block, but this reward halves approximately every four years. Transaction Fees: Miners also earn transaction fees from the transactions

included in the blocks they mine. Users pay fees to have their transactions processed by miners, especially when they need faster confirmation times.

2. Halving: The halving mechanism ensures that over time, fewer Litecoins are introduced into circulation, creating a deflationary model. This makes mining more valuable as the circulating supply becomes scarcer, incentivizing miners to continue participating in the network even as block rewards decrease.
3. Economic Security: The cost of mining (e.g., hardware and electricity) provides a strong economic incentive for miners to act honestly. If miners attempt to cheat or attack the network, they risk losing the computational work they invested, as invalid blocks will be rejected by the network.

Fees on the Litecoin Blockchain:

- Transaction Fees: Litecoin users pay a transaction fee for each transaction, typically calculated in LTC per byte of transaction data. The fees are dynamic and vary based on network congestion.
- Low Fees: Litecoin is known for its relatively low transaction fees compared to other blockchains like Bitcoin, which makes it ideal for smaller transactions and micro-payments.
- Fee Redistribution: Collected transaction fees are distributed to miners as part of their rewards for validating transactions and securing the network.

S.9 Energy consumption sources and methodologies

For the calculation of energy consumption, 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 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

MKR — Maker

FFG DTI: SV17PZF24

Quantitative information

Quantitative sustainability indicators for Maker

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Maker**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**161.46809**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Maker is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Maker relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

NEAR — NEAR Protocol

FFG DTI: MXXM59Z0T

Quantitative information

Quantitative sustainability indicators for NEAR Protocol

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**NEAR Protocol**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**919927.05939**	kWh/a
S.10 Renewable energy consumption	**37.4188297905**	%
S.11 Energy intensity	**0.00006**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**309.79230**	tCO2e
S.14 GHG intensity	**0.00002**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

NEAR Protocol is present on the Near Protocol network.

The NEAR Protocol uses a unique consensus mechanism combining Proof of Stake (PoS) and a novel approach called Doomslug, which enables high efficiency, fast transaction processing, and secure finality in its operations.

Core Concepts:

1. Doomslug and Proof of Stake:
- NEAR's consensus mechanism primarily revolves around PoS, where validators stake NEAR tokens to participate in securing the network. However, NEAR's implementation is enhanced with the Doomslug protocol.
- Doomslug allows the network to achieve fast block finality by requiring blocks to be confirmed in two stages. Validators propose blocks in the first step, and finalization occurs when two-thirds of validators approve the block, ensuring rapid transaction confirmation.

2. Sharding with Nightshade:
- NEAR uses a dynamic sharding technique called Nightshade. This method splits the network into multiple shards, enabling parallel processing of transactions across the network, thus significantly increasing throughput. Each shard processes a portion of transactions, and the outcomes are merged into a single "snapshot" block.
- This sharding approach ensures scalability, allowing the network to grow and handle increasing demand efficiently.

Consensus Process:

1. Validator Selection:
- Validators are selected to propose and validate blocks based on the amount of NEAR tokens staked. This selection process is designed to ensure that only validators with significant stakes and community trust participate in securing the network.

2. Transaction Finality:

   - NEAR achieves transaction finality through its PoS-based system, where validators vote on blocks. Once two-thirds of validators approve a block, it reaches finality under Doomslug, meaning that no forks can alter the confirmed state.

3. Epochs and Rotation:
   - Validators are rotated in epochs to ensure fairness and decentralization. Epochs are intervals in which validators are reshuffled, and new block proposers are selected, ensuring a balance between performance and decentralization.

S.5 Incentive Mechanisms and Applicable Fees

NEAR Protocol is present on the Near Protocol network.

NEAR Protocol employs several economic mechanisms to secure the network and incentivize participation.

Incentive Mechanisms to Secure Transactions:

1. Staking Rewards: Validators and delegators secure the network by staking NEAR tokens. Validators earn around 5% annual inflation, with 90% of newly minted tokens distributed as staking rewards. Validators

propose blocks, validate transactions, and receive a share of these rewards based on their staked tokens. Delegators earn rewards proportional to their delegation, encouraging broad participation.

2. Delegation: Token holders can delegate their NEAR tokens to validators to increase the validator's stake and improve the chances of being selected to validate transactions. Delegators share in the validator's rewards based on their delegated tokens, incentivizing users to support reliable validators.

3. Slashing and Economic Penalties: Validators face penalties for malicious behavior, such as failing to validate correctly or acting dishonestly. The slashing mechanism enforces security by deducting a portion of their staked tokens, ensuring validators follow the network's best interests.

4. Epoch Rotation and Validator Selection: Validators are rotated regularly during epochs to ensure fairness and prevent centralization. Each epoch reshuffles validators, allowing the protocol to balance decentralization with performance.

Fees on the NEAR Blockchain:

1. Transaction Fees: Users pay fees in NEAR tokens for transaction processing, which are burned to reduce the total circulating supply, introducing a potential deflationary effect over time. Validators also receive a portion of transaction fees as additional rewards, providing an ongoing incentive for network maintenance.

2. Storage Fees: NEAR Protocol charges storage fees based on the amount of blockchain storage consumed by accounts, contracts, and data. This requires users to hold NEAR tokens as a deposit proportional to their storage usage, ensuring the efficient use of network resources.

3. Redistribution and Burning: A portion of the transaction fees (burned NEAR tokens) reduces the overall supply, while the rest is distributed to validators as compensation for their work. The burning mechanism helps maintain long-term economic sustainability and potential value appreciation for NEAR holders.

4. Reserve Requirement: Users must maintain a minimum account balance and reserves for data storage, encouraging efficient use of resources and preventing spam attacks.

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.

To determine the energy consumption of a token, the energy consumption of the Near Protocol network 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

OP — Optimism

FFG DTI: 9NRMM2RC4

Quantitative information

Quantitative sustainability indicators for Optimism

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Optimism**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**982.14794**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Optimism is a Layer 2 scaling solution for Ethereum that uses Optimistic Rollups to increase transaction throughput and reduce costs while inheriting the security of the Ethereum main chain.

Core Components:

1. Optimistic Rollups:
   - Rollup Blocks: Transactions are batched into rollup blocks and processed off-chain.
   - State Commitments: The state of these transactions is periodically committed to the Ethereum main chain.

2. Sequencers:
   - Transaction Ordering: Sequencers are responsible for ordering transactions and creating batches.
   - State Updates: Sequencers update the state of the rollup and submit these updates to the Ethereum main chain.
   - Block Production: They construct and execute Layer 2 blocks, which are then posted to Ethereum.

3. Fraud Proofs:
   - Assumption of Validity: Transactions are assumed to be valid by default.
   - Challenge Period: A specific time window during which anyone can challenge a transaction by submitting a fraud proof.
   - Dispute Resolution: If a transaction is challenged, an interactive verification game is played to determine its validity. If fraud is detected, the invalid state is rolled back, and the dishonest participant is penalized.

Consensus Process:

1. Transaction Submission: Users submit transactions to the sequencer, which orders them into batches.

2. Batch Processing: The sequencer processes these transactions off-chain, updating the Layer 2 state.

3. State Commitment: The updated state and the batch of transactions are periodically committed to the Ethereum main chain. This is done by posting the state root (a cryptographic hash representing the state) and transaction data as calldata on Ethereum.

4. Fraud Proofs and Challenges: Once a batch is posted, there is a challenge period during which anyone can submit a fraud proof if they believe a transaction is invalid.

- Interactive Verification: The dispute is resolved through an interactive verification game, which involves breaking down the transaction into smaller steps to identify the exact point of fraud.
- Rollbacks and Penalties: If fraud is proven, the batch is rolled back, and the dishonest actor loses their staked collateral as a penalty.

5. Finality: After the challenge period, if no fraud proof is submitted, the batch is considered final. This means the transactions are accepted as valid, and the state updates are permanent.

S.5 Incentive Mechanisms and Applicable Fees

Optimism, an Ethereum Layer 2 scaling solution, uses Optimistic Rollups to increase transaction throughput and reduce costs while maintaining security and decentralization.

Incentive Mechanisms:

1. Sequencers:
- Transaction Ordering: Sequencers are responsible for ordering and batching transactions off-chain. They play a critical role in maintaining the efficiency and speed of the network.
- Economic Incentives: Sequencers earn transaction fees from users. These fees incentivize sequencers to process transactions quickly and accurately.

2. Validators and Fraud Proofs:
- Assumption of Validity: In Optimistic Rollups, transactions are assumed to be valid by default. This allows for quick transaction finality.
- Challenge Mechanism: Validators (or anyone) can challenge the validity of a transaction by submitting a fraud proof during a specified challenge period. This mechanism ensures that invalid transactions are detected and reverted.
- Challenge Rewards: Successful challengers are rewarded for identifying and proving fraudulent transactions. This incentivizes participants to actively monitor the network for invalid transactions, thereby enhancing security.

3. Economic Penalties:
- Fraud Proof Penalties: If a sequencer includes an invalid transaction and it is successfully challenged, they face economic penalties, such as losing a portion of their staked collateral. This discourages dishonest behavior.
- Inactivity and Misbehavior: Validators and sequencers are also incentivized to remain active and behave correctly, as inactivity or misbehavior can lead to penalties and loss of rewards.

Fees Applicable on the Optimism Layer 2 Protocol:

1. Transaction Fees:
- Layer 2 Transaction Fees: Users pay fees for transactions processed on the Layer 2 network. These fees are generally lower than Ethereum mainnet fees due to the reduced computational load on the main chain.
- Cost Efficiency: By batching multiple transactions into a single batch, Optimism reduces the overall cost per transaction, making it more economical for users.

2. L1 Data Fees:
- Posting Batches to Ethereum: Periodically, the state updates from Layer 2 transactions are posted to the Ethereum mainnet as calldata. This involves a fee known as the L1 data fee, which covers the gas cost of publishing these state updates on Ethereum.
- Cost Sharing: The fixed costs of posting state updates to Ethereum are spread across multiple transactions within a batch, reducing the cost burden on individual transactions.

3. Smart Contract Fees: Execution Costs: Fees for deploying and interacting with smart contracts on Optimism are based on the computational resources required. This ensures that users are charged proportionally for the resources they consume.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Optimism network 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.

PAXG — Paxos Gold

FFG DTI: RPGFC7GN3

Quantitative information

Quantitative sustainability indicators for Paxos Gold

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Paxos Gold**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**4489.26366**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Paxos Gold is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Paxos Gold relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

POL — Polygon POL

FFG DTI: GB8DQ8DWN

Quantitative information

Quantitative sustainability indicators for Polygon POL

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Polygon POL**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**96111.80873**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Polygon POL is present on the Polygon network.
Polygon PoS is a scaling network connected to Ethereum. It uses a Proof-of-Stake consensus and validator framework, together with checkpointing to Ethereum, to validate transactions, produce blocks and provide finality assurances.
Core Concepts:
1. Proof of Stake (PoS):
– Validator Selection: Validators on the Polygon network participate in consensus by staking POL. Validator selection and participation are based on the applicable Polygon PoS validator and staking rules.
– Delegation: Token holders who do not wish to run a validator node may delegate POL to validators. Delegators may share in rewards earned by the validators to whom they delegate, subject to the applicable validator commission and protocol rules.
2. Checkpointing to Ethereum:
– Polygon validators periodically submit checkpoints to Ethereum. This supports the security and finality of transactions processed on Polygon by anchoring state information to Ethereum.
3. Block Production and Validation:
– Validators propose, verify and validate blocks in accordance with the Polygon PoS protocol. Validators are incentivised to act honestly and maintain availability, and may be subject to protocol-level penalties for misconduct or failure to perform their duties.
Historical note: Polygon was formerly known as Matic Network, and MATIC was previously used as the native staking and gas token. Following the MATIC-to-POL migration, this report refers to POL as the relevant token for Polygon POL.

S.5 Incentive Mechanisms and Applicable Fees

Polygon POL is present on the Polygon network.
Polygon uses a Proof-of-Stake validator and delegation model to incentivise network security, transaction validation and block production.
Incentive Mechanisms:
1. Validators:
– Staking Rewards: Validators secure the network by staking POL and participating in consensus. Validators may earn staking rewards and transaction fees for validating transactions, producing blocks and maintaining network availability.
– Block Production and Validation: Validators are responsible for proposing, verifying and validating blocks in accordance with the protocol rules. Validators are incentivised to act honestly and efficiently in order to earn rewards and avoid penalties.

– Checkpointing: Validators periodically submit checkpoints to Ethereum, supporting the security and finality of transactions processed on Polygon.
2. Delegators:
– Delegation: Token holders who do not wish to operate a validator node may delegate POL to validators. Delegators may receive a share of validator rewards, subject to the applicable validator commission and protocol rules.
– Shared Rewards: Rewards earned by validators may be shared with delegators based on the amount delegated and the validator’s performance.
3. Economic Security:
– Penalties: Validators may be subject to protocol-level penalties, including slashing where applicable under the protocol rules, for malicious behaviour or failure to perform required duties.
– Bond Requirements: Validators are required to stake or bond POL in order to participate in consensus, aligning their economic incentives with the security and integrity of the network.
Fees on the Polygon Blockchain:
1. Transaction Fees:
– Users pay transaction fees for transactions and smart-contract interactions on Polygon. These fees are paid in the relevant network fee token and are generally lower than comparable transactions on Ethereum mainnet.
2. Smart Contract Fees:
– Fees for deploying and interacting with smart contracts depend on the computational resources required and the prevailing network conditions.

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. Due to the structure of this network, it is not only the mainnet that is responsible for energy consumption. In order to calculate the structure adequately, a proportion of the energy consumption of the connected network, ethereum, must also be taken into account, because the connected network is also responsible for security. This proportion is determined on the basis of gas consumption. 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 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.

To determine the energy consumption of a token, the energy consumption of the Polygon network 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.

SNX — Synthetix Network

FFG DTI: RSN26S0SB

Quantitative information

Quantitative sustainability indicators for Synthetix Network

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Synthetix Network**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**212.24187**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Synthetix Network is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Synthetix Network relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

SOL — Solana SOL

FFG DTI: 6QZ1LNC12

Quantitative information

Quantitative sustainability indicators for Solana SOL

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Solana SOL**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**6843749.99645**	kWh/a
S.10 Renewable energy consumption	**38.5831139958**	%
S.11 Energy intensity	**0.00000**	kWh
S.12 Scope 1 DLT GHG emission - Controlled	**0.00000**	tCO2e
S.13 Scope 2 DLT GHG emission - Purchased	**2319.13534**	tCO2e
S.14 GHG intensity	**0.00000**	kgCO2e

Qualitative information

S.4 Consensus Mechanism

Solana uses a unique combination of Proof of History (PoH) and Proof of Stake (PoS) to achieve high throughput, low latency, and robust security.
Core Concepts:
1. Proof of History (PoH):
– Time-Stamped Transactions: PoH is a cryptographic technique that timestamps transactions, creating a historical record that proves that an event has occurred at a specific moment in time.
– Verifiable Delay Function: PoH uses a Verifiable Delay Function (VDF) to generate a unique hash that includes the transaction and the time it was processed. This sequence of hashes provides a verifiable order of events, enabling the network to efficiently process transactions.
2. Proof of Stake (PoS):
– Validator Selection: Validators are chosen to produce new blocks based on the number of SOL tokens they have staked. The more tokens staked, the higher the chance of being selected to validate transactions and produce new blocks.
– Delegation: Token holders can delegate their SOL tokens to validators, earning rewards proportional to their stake while enhancing the network's security.
Consensus Process:
1. Transaction Validation: Transactions are broadcast to the network and collected by validators. Each transaction is validated to ensure it meets the network's criteria, such as having correct signatures and sufficient funds.
2. PoH Sequence Generation: A validator generates a sequence of hashes using PoH, each containing a timestamp and the previous hash. This process creates a historical record of transactions, establishing a cryptographic clock for the network.
3. Block Production: The network uses PoS to select a leader validator based on their stake. The leader is responsible for bundling the validated transactions into a block. The leader validator uses the PoH sequence to order transactions within the block.
4. Consensus and Finalization: Other validators verify the block produced by the leader validator. They check the correctness of the PoH sequence and validate the transactions within the block. Once the block is verified, it is added to the blockchain.

Security and Economic Incentives:
1. Incentives for Validators:
– Block Rewards: Validators may earn rewards for producing and validating blocks. These rewards are distributed in SOL and are generally linked to stake, performance and protocol rules.
– Transaction Fees: Validators may also earn transaction fees from transactions included in the blocks they produce. These fees provide an additional incentive for validators to process transactions efficiently.
2. Security:
– Staking: Validators stake SOL to participate in the consensus process. Staking aligns validator incentives with the security and reliability of the network.
– Delegated Staking: Token holders can delegate SOL to validators, supporting network security and decentralisation. Delegators may share in rewards and are incentivised to choose reliable validators.
3. Economic Penalties:
– Solana does not currently have an in-protocol implementation of slashing. Validators that perform poorly may receive reduced rewards, may be avoided by delegators, or may otherwise be affected by protocol and market-based incentives. Any future introduction of slashing would depend on protocol-level changes.

S.5 Incentive Mechanisms and Applicable Fees

Solana uses a combination of Proof of History (PoH) and Proof of Stake (PoS) to support network performance, transaction ordering, validation and security.
Incentive Mechanisms:
1. Validators:
– Staking Rewards: Validators may earn rewards for producing and validating blocks in accordance with Solana protocol rules. Rewards are paid in SOL and depend on factors such as stake, uptime, performance and network conditions.
– Transaction Fees: Validators may earn transaction fees from transactions included in the blocks they produce. This provides an additional financial incentive for validators to process transactions efficiently and maintain network integrity.
2. Delegators:
– Delegated Staking: Token holders who do not wish to run a validator node may delegate SOL to a validator. Delegators may share in the rewards earned by validators and are incentivised to choose reliable validators.
3. Economic Security:
– Solana does not currently have an in-protocol implementation of slashing. Validator and delegator incentives are primarily based on staking rewards, transaction fees, validator performance, reputation and delegation decisions.
– Validators that perform poorly or are unreliable may receive reduced rewards and may attract less delegated stake.
Applicable Fees:
1. Transaction Fees:
– Transaction fees are paid in SOL and are used to compensate validators for processing transactions and maintaining the network.
2. Smart Contract / Program Interaction Fees:
– Fees for deploying or interacting with programs on Solana depend on the computational and network resources required and the applicable protocol rules.

S.9 Energy consumption sources and methodologies

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.15 Key energy sources and methodologies

To determine the proportion of renewable energy usage, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available electricity-mix data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The energy intensity is calculated as the estimated marginal energy consumption associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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 greenhouse gas emissions, the geographic distribution of nodes, validators or miners, where relevant, is assessed based on publicly available information, including protocol documentation, public network statistics, public node or validator information where available, publicly available mining, staking or node-distribution data, and conservative assumptions.
Where asset-specific geographic data is not publicly available, reference networks that are comparable in terms of consensus mechanism and incentive structure may be used. This geographic information, or the relevant proxy assumptions, is combined with publicly available greenhouse-gas intensity data, including data from Our World in Data, Ember and the Energy Institute, as referenced below.
The GHG intensity is calculated as the estimated marginal emissions associated with one additional transaction or, where transaction-level allocation is not directly available, using the conservative allocation methodology described in S.9.
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.

UNI — Uniswap

FFG DTI: XMB84LZBZ

Quantitative information

Quantitative sustainability indicators for Uniswap

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Uniswap**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**2048.91965**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Uniswap is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, Uniswap relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

USDC — USDC

FFG DTI: TJWK5QTRK

Quantitative information

Quantitative sustainability indicators for USDC

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**USDC**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**473792.99646**	kWh/a

Qualitative information

S.4 Consensus Mechanism

USDC is present on the Ethereum network.

The crypto-asset's Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, replaces mining with validator staking. Validators must stake at least 32 ETH every block a validator is randomly chosen to propose the next block. Once proposed the other validators verify the blocks integrity.

The network operates on a slot and epoch system, where a new block is proposed every 12 seconds, and finalization occurs after two epochs (~12.8 minutes) using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule (LMD-GHOST) ensures the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but face slashing for malicious behavior or inactivity. PoS aims to improve energy efficiency, security, and scalability, with future upgrades like Proto-Danksharding enhancing transaction efficiency.

S.5 Incentive Mechanisms and Applicable Fees

As an asset issued on the Ethereum network, USDC relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

S.9 Energy consumption sources and methodologies

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

To determine the energy consumption of a token, the energy consumption of the Ethereum network 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.

VALOR — Valor Token

FFG DTI: Not available

No Functionally Fungible Group Digital Token Identifier (FFG DTI) for VALOR was identified at the date of preparation of this report.

Quantitative information

Quantitative sustainability indicators for Valor Token

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Valor Token**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**50,000.00**[2]	kWh/a

Qualitative information

S.4 Consensus Mechanism

Valor Token is implemented as a token on the Ethereum network. VALOR does not maintain its own distributed-ledger network and does not have a separate consensus mechanism. The relevant consensus mechanism for transactions involving VALOR is therefore the consensus mechanism of the Ethereum network.

Ethereum uses a Proof-of-Stake (PoS) consensus mechanism, introduced with The Merge in 2022, which replaced mining with validator staking. Validators must stake at least 32 ETH. For each block, a validator is selected to propose the next block, and other validators verify the integrity of the proposed block.

The Ethereum network operates on a slot and epoch system, where a new block is proposed approximately every 12 seconds and finalization occurs after two epochs, using Casper-FFG. The Beacon Chain coordinates validators, while the fork-choice rule, LMD-GHOST, helps ensure that the chain follows the heaviest accumulated validator votes. Validators earn rewards for proposing and verifying blocks, but may face slashing for malicious behaviour or penalties for inactivity. The Proof-of-Stake mechanism is significantly less energy-intensive than Proof-of-Work mining.

S.5 Incentive Mechanisms and Applicable Fees

As a token implemented on the Ethereum network, Valor Token relies on the incentive and fee mechanisms of Ethereum.

Ethereum's PoS system secures transactions through validator incentives and economic penalties. Validators stake at least 32 ETH and earn rewards for proposing blocks, attesting to valid ones, and participating in sync committees. Rewards are paid in newly issued ETH and transaction fees.

Under EIP-1559, transaction fees consist of a base fee, which is burned to reduce supply, and an optional priority fee (tip) paid to validators. Validators face slashing if they act maliciously and incur penalties for inactivity.

This system aims to increase security by aligning incentives while making the crypto-asset's fee structure more predictable and deflationary during high network activity.

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[2] Estimated value. No directly published asset-specific energy-consumption figure is available for Valor Token. The estimate is based on best-effort and conservative assumptions as described in S.9 below.

S.9 Energy consumption sources and methodologies

The S.8 energy-consumption value for Valor Token is an estimated value. No directly published asset-specific energy-consumption figure is available for Valor Token. VALOR does not maintain its own distributed-ledger network, mining infrastructure, validator set or independent consensus mechanism. VALOR is implemented as a token on the Ethereum network. Accordingly, any energy consumption attributable to VALOR transactions arises from activity on Ethereum, which uses a Proof-of-Stake consensus mechanism.

The estimate of 50,000.00 kWh/a has been calculated on a best-effort and conservative basis. First, the energy consumption of the Ethereum network is determined using a bottom-up approach based on the estimated number of validators and nodes, the hardware required to operate the relevant client software, and empirically observed or estimated hardware energy consumption. A portion of the Ethereum network's energy consumption is then attributed to VALOR based on the activity of the crypto-asset on the Ethereum network and, where asset-specific activity data is incomplete or not directly available, on a conservative allocation proxy.

The estimate does not represent separately measured energy consumption of an independent VALOR network. It represents the estimated share of Ethereum network energy consumption attributable to VALOR-related activity during the reference period. The calculation uses available public protocol information, Digital Token Identifier / Functionally Fungible Group Digital Token Identifier mapping where available, on-chain activity data where available, and best-effort assumptions.

Where assumptions were required, they were made on a conservative basis in order not to intentionally understate adverse impacts. The estimate will be reviewed at least annually and updated without undue delay if more accurate asset-specific data becomes available or if there is a material change in the underlying methodology, network activity or supported implementation of VALOR.

XLM — Stellar Lumen

FFG DTI: ZCN8SR2H7

Quantitative information

Quantitative sustainability indicators for Stellar Lumen

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Stellar Lumen**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**52559.99597**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Stellar uses a unique consensus mechanism known as the Stellar Consensus Protocol (SCP).

Core Concepts:

1. Federated Byzantine Agreement (FBA):
- SCP is built on the principles of Federated Byzantine Agreement (FBA), which allows decentralized, leaderless consensus without the need for a closed system of trusted participants.
- Quorum Slices: Each node in the network selects a set of other nodes (quorum slice) that it trusts. Consensus is achieved when these slices overlap and collectively agree on the transaction state.

2. Nodes and Validators:
- Nodes: Nodes running the Stellar software participate in the network by validating transactions and maintaining the ledger.
- Validators: Nodes that are responsible for validating transactions and reaching consensus on the state of the ledger. Consensus Process

3. Transaction Validation: Transactions are submitted to the network and nodes validate them based on predetermined rules, such as sufficient balances and valid signatures.

4. Nomination Phase:
- Nomination: Nodes nominate values (proposed transactions) that they believe should be included in the next ledger. Nodes communicate their nominations to their quorum slices.
- Agreement on Nominations: Nodes vote on the nominated values, and through a process of voting and federated agreement, a set of candidate values emerges. This phase continues until nodes agree on a single value or a set of values.

5. Ballot Protocol (Voting and Acceptance): Balloting:
- The agreed-upon values from the nomination phase are then put into ballots. Each ballot goes through multiple rounds of voting, where nodes vote to either accept or reject the proposed values.
- Federated Voting: Nodes exchange votes within their quorum slices, and if a value receives sufficient votes across overlapping slices, it moves to the next stage.
- Acceptance and Confirmation: If a value gathers enough votes through multiple stages (prepare, confirm, externalize), it is accepted and externalized as the next state of the ledger.

6. Ledger Update: Once consensus is reached, the new transactions are recorded in the ledger. Nodes update their copies of the ledger to reflect the new state. Security and Economic Incentives

7. Trust and Quorum Slices: Nodes are free to choose their own quorum slices, which provides flexibility and decentralization. The overlapping nature of quorum slices ensures that the network can reach consensus even if some nodes are faulty or malicious.
8. Stability and Security: SCP ensures that the network can achieve consensus efficiently without relying on energy- intensive mining processes. This makes it environmentally friendly and suitable for high- throughput applications.
9. Incentive Mechanisms: Unlike Proof of Work (PoW) or Proof of Stake (PoS) systems, Stellar does not rely on direct economic incentives like mining rewards. Instead, the network incentivizes participation through the intrinsic value of maintaining a secure, efficient, and reliable payment network.

S.5 Incentive Mechanisms and Applicable Fees

Stellar's consensus mechanism, the Stellar Consensus Protocol (SCP), is designed to achieve decentralized and secure transaction validation through a federated Byzantine agreement (FBA) model. Unlike Proof of Work (PoW) or Proof of Stake (PoS) systems, Stellar does not rely on direct economic incentives like mining rewards. Instead, it ensures network security and transaction validation through intrinsic network mechanisms and transaction fees.

Incentive Mechanisms:

1. Quorum Slices and Trust:
   - Quorum Slices: Each node in the Stellar network selects other nodes it trusts to form a quorum slice. Consensus is achieved through the intersection of these slices, creating a robust and decentralized trust network.
   - Federated Voting: Nodes communicate their votes within their quorum slices, and through multiple rounds of federated voting, they agree on the transaction state. This process ensures that even if some nodes are compromised, the network can still achieve consensus securely.
2. Intrinsic Value and Participation:
   - Network Value: The intrinsic value of participating in a secure, efficient, and reliable payment network incentivizes nodes to act honestly and maintain network security. Organizations and individuals running nodes benefit from the network's functionality and the ability to facilitate transactions.
   - Decentralization: By allowing nodes to choose their own quorum slices, Stellar promotes decentralization, reducing the risk of central points of failure and making the network more resilient to attacks. Fees on the Stellar Blockchain
3. Transaction Fees:
   - Flat Fee Structure: Each transaction on the Stellar network incurs a flat fee of 0.00001 XLM (known as a base fee). This low and predictable fee structure makes Stellar suitable for micropayments and high-volume transactions.
   - Spam Prevention: The transaction fee serves as a deterrent against spam attacks. By requiring a small fee for each transaction, Stellar ensures that the network remains efficient and that resources are not wasted on processing malicious or frivolous transactions.
4. Operational Costs: Minimal Fees: The minimal transaction fees on Stellar not only prevent spam but also cover the operational costs of running the network. This ensures that the network can sustain itself without placing a significant financial burden on users.
5. Reserve Requirements:
   - Account Reserves: To create a new account on the Stellar network, a minimum balance of 1 XLM is required. This reserve requirement prevents the creation of an excessive number of accounts, further protecting the network from spam and ensuring efficient resource usage.
   - Trustline and Offer Reserves: Additional reserve requirements exist for creating trustlines and offers on the Stellar decentralized exchange (DEX). These reserves help maintain network integrity and prevent abuse.

S.9 Energy consumption sources and methodologies

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.

XRP — Ripple XRP

FFG DTI: 42PHJB2BS

Quantitative information

Quantitative sustainability indicators for Ripple XRP

Field	Value	Unit
S.1 Name	**SMART VALOR AG Liechtenstein**	/
S.2 Relevant legal entity identifier	**254900S56908SP1E8O53**	/
S.3 Name of the crypto-asset	**Ripple XRP**	/
S.6 Beginning of the period to which the disclosure relates	**2025-04-20**	/
S.7 End of the period to which the disclosure relates	**2026-04-20**	/
S.8 Energy consumption	**456267.92619**	kWh/a

Qualitative information

S.4 Consensus Mechanism

Ripple XRP is present on the Ripple network.

The Ripple blockchain, specifically the XRP Ledger (XRPL), uses a consensus mechanism known as the Ripple Protocol Consensus Algorithm (RPCA). It differs from Proof of Work (PoW) and Proof of Stake (PoS) as it doesn't rely on mining or staking but instead leverages trusted validators in a Federated Byzantine Agreement (FBA) model.

Core Concepts:

1. Validators and Unique Node Lists (UNL): Validators are trusted nodes in the network that validate transactions and propose new ledger updates. Each node maintains a list of trusted validators known as its Unique Node List (UNL). Consensus is achieved when 80% of the validators in a node's UNL agree on the validity of a transaction or block. This ensures high levels of security and decentralization.
2. Transaction Ordering and Validation: Transactions are broadcast to validators, and once 80% of the validators agree, the transaction is considered confirmed. Each ledger in the XRPL contains transaction data, and validators ensure the validity and proper ordering of these transactions.

Consensus Process:

1. Proposal Phase: Validators propose new transactions to be added to the ledger.
2. Validation Phase: Validators vote on proposed transactions by comparing them to their UNL. Consensus is achieved when 80% of validators agree.
3. Finalization: Once consensus is reached, the transactions are written into the new ledger, making them irreversible and final.

S.5 Incentive Mechanisms and Applicable Fees

Ripple XRP is present on the Ripple network.

The Ripple XRP blockchain uses a unique incentive structure that differs from traditional Proof of Work (PoW) or Proof of Stake (PoS) systems, focusing on its Ripple Protocol Consensus Algorithm (RPCA).

Incentive Mechanisms to Secure Transactions:

1. Validators: Validators on the Ripple network are not directly compensated with rewards like in PoW/PoS models. Instead, they are incentivized by the utility and stability of the network, particularly financial institutions that benefit from Ripple's efficiency in cross-border payments.
2. No Mining: Since Ripple does not use mining, it eliminates the need for energy-intensive computations, contributing to fast transaction speeds and scalability.

Fees on the Ripple XRP Blockchain:

1. Transaction Fees: Ripple charges minimal transaction fees (typically fractions of an XRP, known as \drops") for each transaction. The purpose of these fees is to prevent network spam and overload.
2. Burn Mechanism: A portion of each transaction fee is burned, meaning it's permanently removed from circulation. This reduces the overall supply of XRP over time, contributing to potential long-term value stability.

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 based on publicly available information, including protocol documentation, network statistics, public blockchain data, public node or validator information where available, published hardware specifications and other publicly available hardware energy-consumption information. SMART VALOR AG Liechtenstein did not perform independent laboratory measurements of hardware energy consumption. Where direct data was not readily available, SMART VALOR AG Liechtenstein used reasonable assumptions, comparable public data and conservative estimates. 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 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.

To determine the energy consumption of a token, the energy consumption of the Ripple network 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.