Sustainability and Environmental Disclosure

Tesseract is committed to transparency and responsible innovation in the crypto-asset ecosystem. In compliance with the EU's Markets in Crypto-Assets (MiCA) Regulation, this disclosure outlines the sustainability and environmental impact of the blockchain networks associated with crypto-assets offered on our platform.

Disclosure Methodology

This disclosure covers:

- The consensus mechanism used by each network
- Estimated energy consumption and carbon footprint
- Known sustainability efforts by protocol maintainers

We rely on publicly available data and third-party environmental assessments to inform this section. Data is updated periodically as new information becomes available.

Asset-by-Asset Sustainability Overview

1. Bitcoin (BTC)

- **Consensus**: Proof-of-Work (PoW)
- **Annual Energy Use**: ~100–150 TWh
- **Carbon Footprint**: High
- **Sustainability Notes**: Decentralized mining; some initiatives in renewable energy adoption (e.g., CleanSpark, Marathon).

2. Ethereum (ETH)

- **Consensus**: Proof-of-Stake (PoS)
- **Annual Energy Use**: ~0.01 TWh
- **Carbon Footprint**: Very Low
- **Sustainability Notes**: Ethereum’s switch to PoS via “The Merge” reduced energy usage by over 99.9%.

3. USD Coin (USDC)

- **Blockchain Networks**: Primarily Ethereum, Solana, Avalanche, Base, and others
- **Sustainability**: Inherits sustainability profile of host network. USDC on Ethereum is now PoS-based.

4. Tether (USDT)

- **Blockchain Networks**: Ethereum, Tron, Solana, Algorand, and others
- **Sustainability**: Varies by host chain. Tron remains PoS-like (DPoS), Ethereum is PoS.

5. Litecoin (LTC)

- **Consensus**: Proof-of-Work (Scrypt)
- **Annual Energy Use**: Moderate
- **Carbon Footprint**: Moderate
- **Notes**: No major sustainability-focused initiatives known.

6. Ripple (XRP)

- **Consensus**: Ripple Protocol Consensus Algorithm (non-mining)
- **Annual Energy Use**: Very Low
- **Carbon Footprint**: Very Low
- **Sustainability Notes**: Ripple claims to be carbon-neutral; partners with sustainability alliances.

7. Solana (SOL)

- **Consensus**: Proof-of-History + PoS hybrid
- **Annual Energy Use**: Low (~0.01 TWh)
- **Carbon Footprint**: Low
- **Sustainability Notes**: Solana Foundation releases carbon footprint reports.

8. Cardano (ADA)

- **Consensus**: Proof-of-Stake (Ouroboros)
- **Annual Energy Use**: Very Low
- **Sustainability Notes**: Emphasis on research-driven and sustainable growth. Community treasury supports environmental projects.

9. Polygon (MATIC)

- **Consensus**: Proof-of-Stake
- **Annual Energy Use**: Very Low
- **Sustainability Notes**: Polygon claims carbon neutrality and publishes impact reports.

10. Polkadot (DOT)

- **Consensus**: Nominated Proof-of-Stake (NPoS)
- **Annual Energy Use**: Low
- **Sustainability Notes**: Low carbon footprint; governance includes sustainability considerations.

11. Binance Coin (BNB)

- **Consensus**: Proof-of-Staked Authority (PoSA)
- **Annual Energy Use**: Low
- **Sustainability Notes**: Energy-efficient by design but lacks public reporting.

12. Avalanche (AVAX)

- **Consensus**: Avalanche Consensus (PoS)
- **Annual Energy Use**: Very Low
- **Sustainability Notes**: Known for high scalability and energy efficiency.

13. Dogecoin (DOGE)

- **Consensus**: Proof-of-Work (merged-mining with Litecoin)
- **Annual Energy Use**: Moderate
- **Sustainability Notes**: Shares energy efficiency issues with PoW assets.

14. DAI (MakerDAO)

- **Host Networks**: Ethereum and Layer-2s
- **Sustainability**: Inherits Ethereum's low-impact PoS profile.

15. Cosmos (ATOM)

- **Consensus**: Tendermint BFT / PoS
- **Annual Energy Use**: Low
- **Sustainability Notes**: Designed to be modular and efficient.

16. NEAR Protocol (NEAR)

- **Consensus**: Nightshade (PoS variant)
- **Annual Energy Use**: Very Low
- **Sustainability Notes**: NEAR is certified carbon neutral by South Pole.

17. Kusama (KSM)

- **Consensus**: Nominated PoS (Polkadot ecosystem)
- **Annual Energy Use**: Low
- **Sustainability Notes**: Shares sustainability characteristics with Polkadot.

Summary Table

Asset	Consensus	Energy Use	Carbon Impact	Notes
Bitcoin	PoW	High	High	No central energy policy
Ethereum	PoS	Very Low	Very Low	Major energy savings post-Merge
USDC	PoS-hosted	Varies	Low	Host chain dependent
USDT	Mixed	Varies	Varies	Host chain dependent
Ripple	Custom	Very Low	Very Low	Carbon-neutral ambitions
Solana	PoH + PoS	Low	Low	Regular footprint reports
Cardano	PoS	Very Low	Very Low	Research-driven sustainability
Polygon	PoS	Very Low	Very Low	Carbon-neutral target
Polkadot	NPoS	Low	Low	Efficient and modular
BNB	PoSA	Low	Low	No public sustainability data
Avalanche	PoS	Very Low	Very Low	Highly efficient

Dogecoin	PoW	Moderate	Moderate	Merged-mining with LTC
DAI	PoS-hosted	Very Low	Very Low	Host chain dependent
ATOM	PoS	Low	Low	Modular and efficient
NEAR	PoS	Very Low	Very Low	Carbon-neutral certified
Kusama	PoS	Low	Low	Inherits Polkadot’s design