



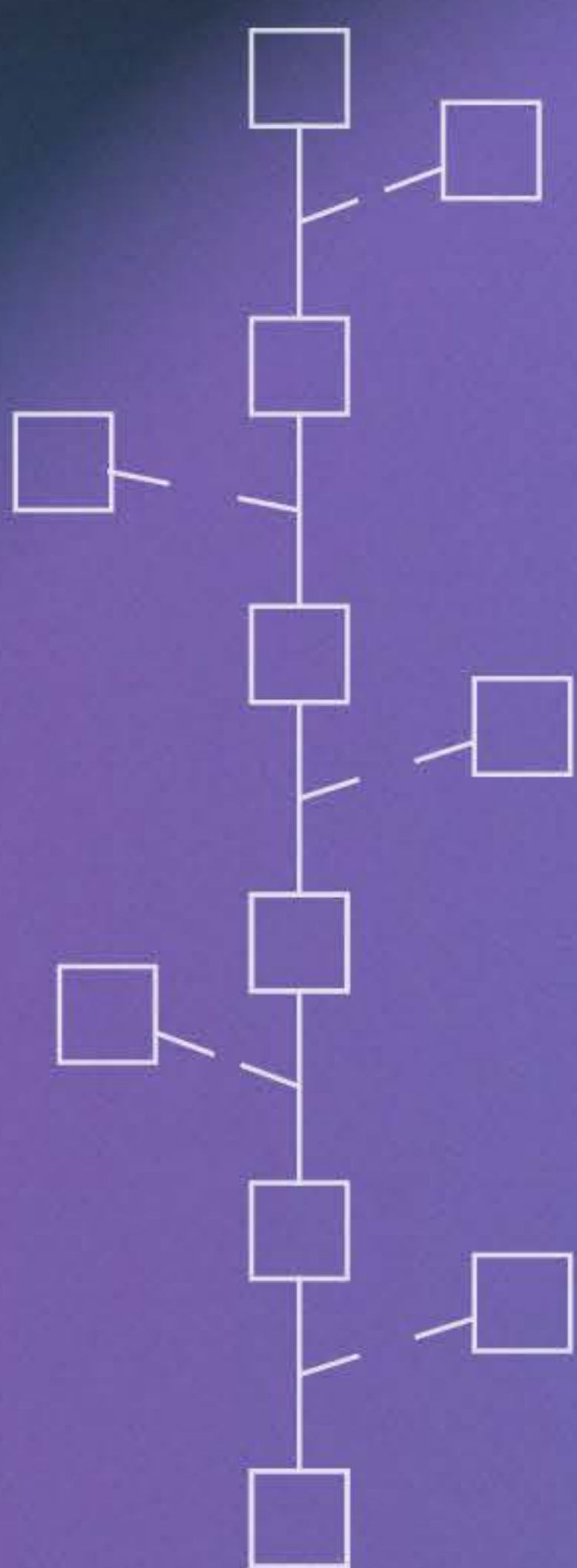
Hedera™

Quick Start

**Start your journey with
the open source,
public Hedera network.**

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Blockchain vs. Hashgraph



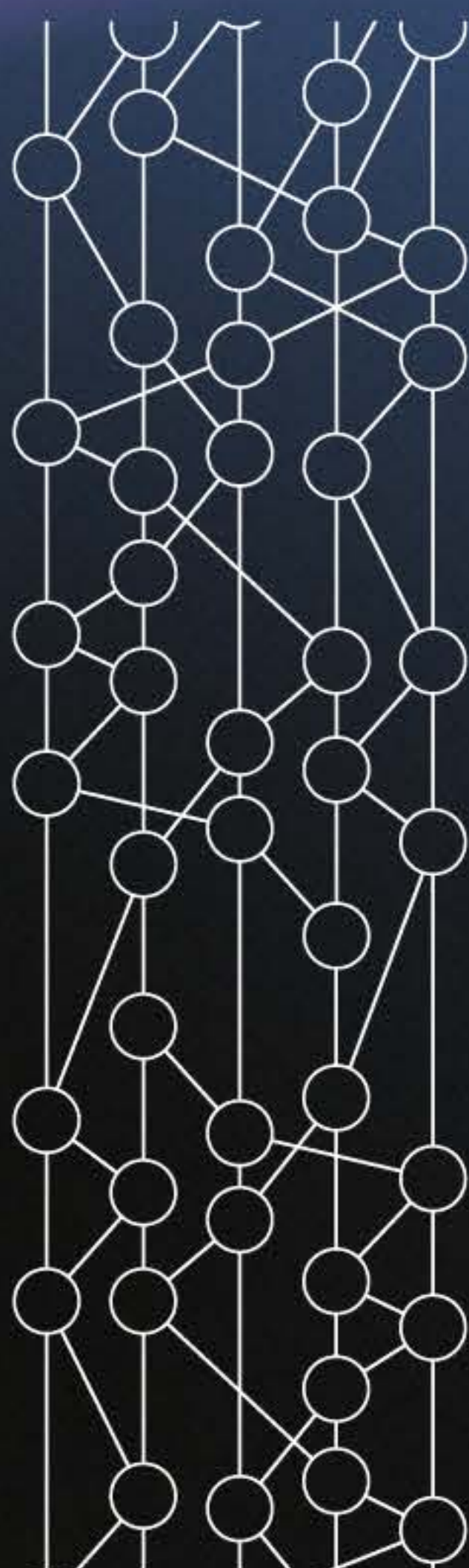
Blockchain

Designed to be slow, as a security measure

Proof-of-work puzzle adjusts to keep the system at a specific speed, as time is needed to determine which block of transactions to add to the chain

Efforts to speed up blockchain all make security sacrifices

Requires heavy electricity usage



Hashgraph

A distributed ledger, but not a blockchain

Combines a gossip protocol with virtual voting algorithm to efficiently and quickly achieve network consensus on transactions

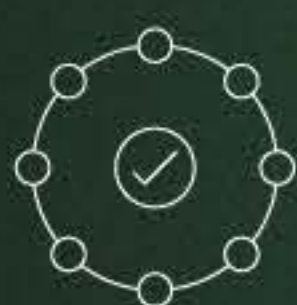
Asynchronous Byzantine fault tolerant (highest level of security for distributed networks)

Does not require heavy electricity usage

The Hedera Network

The Hedera network is ready to scale and made for developers, offering three primary network services:

3rd PARTY APPLICATIONS



CONSENSUS SERVICE

Stream immutable, verifiable, and fairly ordered events to Hedera at 10,000 TPS and \$0.0001 USD per message.



TOKEN SERVICE

Mint and manage native fungible tokens and NFTs mapping to ERC-20, 721, and 1155 standards. Integrate with Smart Contracts for full programmability.



SMART CONTRACTS

Build EVM-based smart contracts, written in Solidity and Vyper, for enterprise and permissionless applications and protocols.



HASHGRAPH CONSENSUS



HBAR (\hbar)

The Native Cryptocurrency of Hedera

HBAR is the native, energy-efficient cryptocurrency of the Hedera public network. HBARs are used to power decentralized applications and to protect the proof-of-stake network.



Network Fuel

Developers use HBARs to pay for network services, such as transferring HBARs, managing fungible and non-fungible tokens, and logging data. For each transaction submitted to the network, HBARs are used to compensate network nodes for bandwidth, compute, and storage.



Network Protection

Hedera's proof-of-stake public network uses HBARs staked to network nodes to weight votes on transactions when reaching consensus. Weighted voting with HBARs makes it difficult and expensive for a bad actor to maliciously affect consensus—it would require them to own and stake over one-third of the network's total supply.

Hedera dapp ecosystem, custody, and hardware wallets:

hedera.com/wallets



Low, Predictable Fees

Fees on Hedera are fixed and won't fluctuate based on network usage. They're set by the Hedera Governing Council, always based in USD, and paid in HBAR.

Average Transaction Fee
\$0.001 USD

Estimate the operational costs of your application:
hedera.com/fees



Blazing-Fast Transactions with Finality

The Hedera network is incredibly fast and offers low bandwidth consumption, enabling real-time application experiences for every use case.

10,000+ Transactions per second

3-5 Sec Confirmation to finality

15 Million Gas per second

An Open Source Network—Built by the Community

The Hedera codebase and standards are open source - changes are proposed by the community through Hedera Improvement Proposals (HIPs).

AMARI

buidler
labs

CALAXY

DOVU

FANTHINGS

ENVISION
BLOCKCHAIN

HashPack

hashport

HORIZEN
LABS

Hsuite

ioBUILDERS

INFINITE
powered by SUKU

launchbadge

LimeChain

LG

Luther
Systems

meeco

OBJECT COMPUTING
YOUR OUTCOMES ENGINEERED

SAUCERSWAP

SIKI

SNICKER
DOODLE

SWIRLDS
LABS

THE HBAR
FOUNDATION

unthink.ai

TYMLEZ

venly

View all HIPs and start contributing:
hips.hedera.com

Governed by Global Organizations

The Hedera Governing Council is a fully decentralized governing body of global organizations consisting of web3 applications, enterprises, and universities.

 abrdn

 edf

NOMURA

 AVERY
DENNISON

eftpos

servicenow

 **BOEING**

FIS

 SHINHAN
BANK

 Chainlink

Google

 Standard
Bank

 **COFRA**

 Swirls

 DBS

IBM

TATA

 **DELL**
Technologies

 IIT
MADRAS

 UBISOFT

 DENTONS

 LG

 **UCL**

Deutsche
Telekom 

 THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE

 wipro

 DLA PIPER

magalu

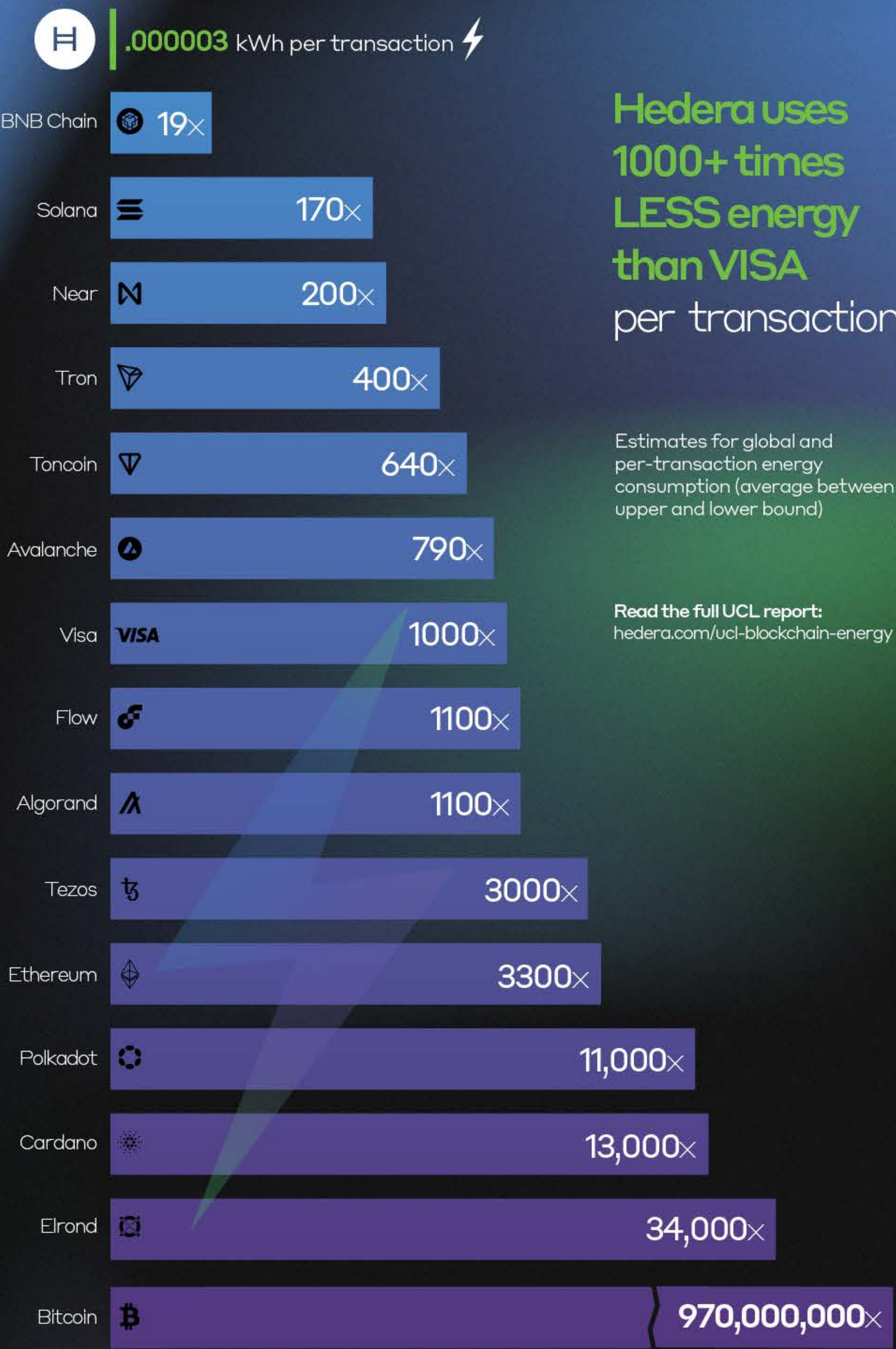
 zain

Learn more about the Hedera Governing Council:
hedera.com/council

The Greenest Blockchain



Hedera is committed to sustainable network operations and offers the lowest energy consumption per transaction compared to alternative blockchain networks and modern payment systems.



Learn more about the sustainability of Hedera:
hedera.com/sustainability

Hedera Use Cases

Hedera network services offer developers a foundation for building game-changing decentralized applications across many use cases.



Decentralized Logging

Create low-cost, scalable, and publicly verifiable logs of data with native consensus timestamps - record payable events, supply chain provenance, IoT sensor data, and more.



On-chain Finance

Build bank-grade applications for the next generation of finance - Hedera powers stablecoin issuance and management, real-world asset marketplaces, lending protocols, and more.



Consumer Engagement & Loyalty

Issue NFT membership and reward tokens in real-time, track engagement transparently, and cultivate a trustworthy, decentralized ecosystem that encourages customer loyalty and participation.



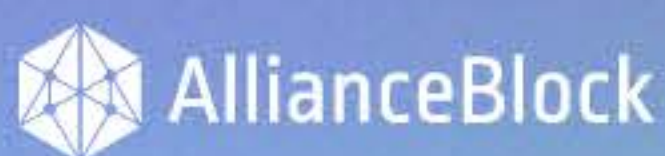
Sustainability

Build, deploy, or access sustainability solutions that take full advantage of Hedera's low energy network, with world-class governance.

Learn more about the use cases and applications built on the open source, public Hedera network:
hedera.com

Enterprise Applications

Enterprise applications using Hedera to improve business processes and procedures.



View more enterprise application on Hedera:
hedera.com/enterprise-applications

Web3 Applications

Participate in DeFi protocols, staking, NFT marketplaces, payments, creator economy, and more.

A E O N

 CALAXY

 Civic Ledger

clout.art

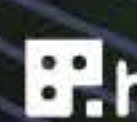
D O V U

Earth 

 ENVISION
BLOCKCHAIN

GoMint.

HASHAXIS

 hashgraph.name

HashGuild

hashp.rt

 HELISWAP

KrypC

 Ledger Works

MIO



Revel

SAUCERSWAP

 Stader


Tangent

THIRD ACT

 TYMLEZ

 tune.fm

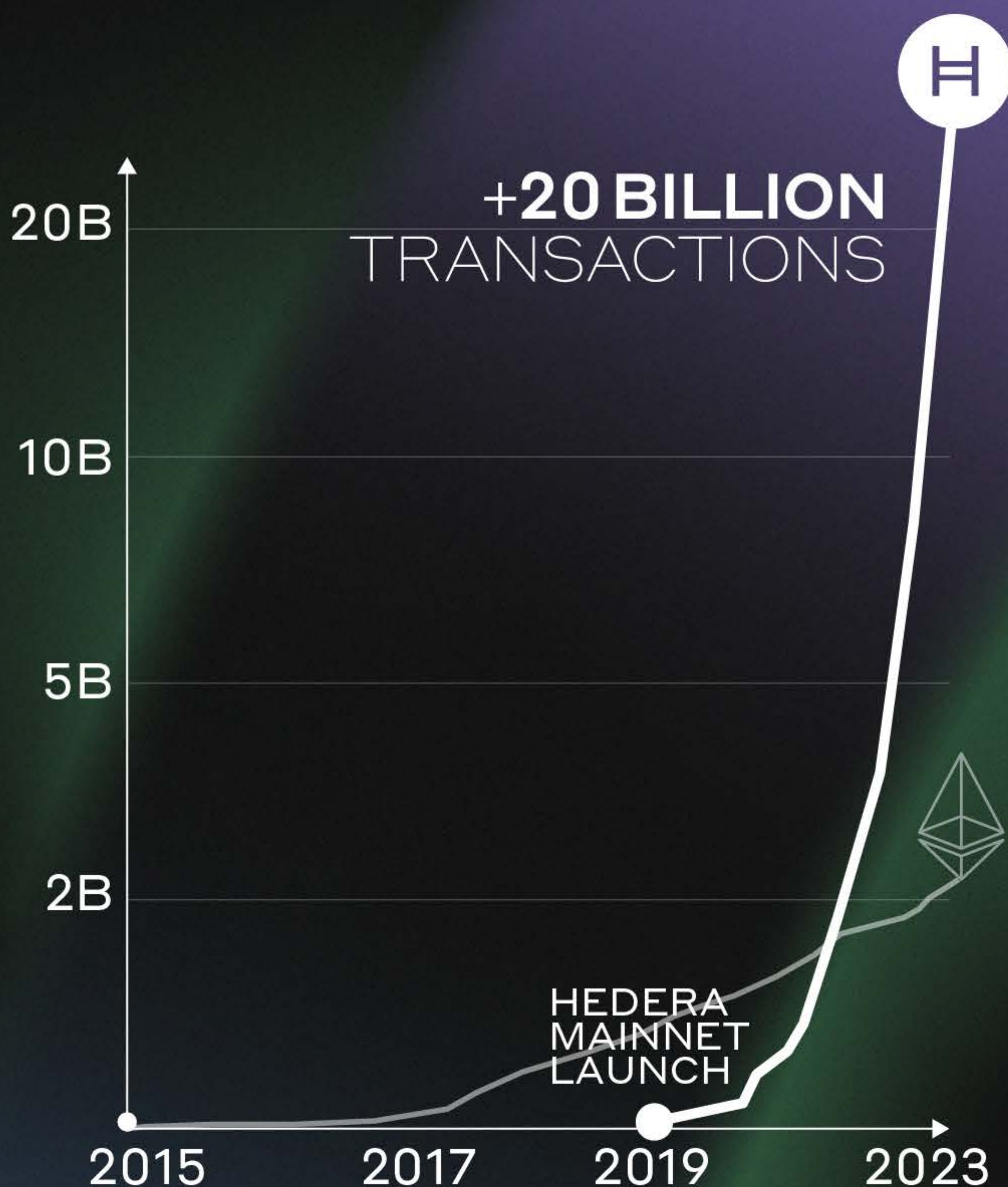
 USD Coin

 WEB23



View more permissionless applications on Hedera:
hedera.com/ecosystem

Application Driven Transactions on Hedera



Hedera is the most used public network by total transaction count. Applications utilizing Hedera's network services have driven over **20 billion real-world application transactions** on the Hedera mainnet, far surpassing Ethereum's total transaction count.

Network dashboard and metrics:
hedera.com/dashboard