JULY 2024

Ethereum Report

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Valour Inc. and Valour Digital Securities Limited (together, "Valour") is a trusted leader in issuing exchange-traded products ("ETPs") that enable retail and institutional investors to access digital assets like Ethereum in a simple and secure way via their traditional bank account. Valour is part of the asset management business line of DeFi Technologies Inc. (CBOE CA: DEFI) (GR: R9B) (OTC: DEFTF). Backed by a globally esteemed team of experts with extensive experience in financial markets and digital assets, we are committed to revolutionising the way individuals and institutions interact with the evolving digital asset ecosystem.

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Reflexivity Research is one of the fastest growing research firms in the disruptive world of blockchain and cryptocurrencies. The company, founded by Will Clemente and Anthony Pompliano and acquired by DeFi Technologies Inc., aims to provide crypto-native research in easily digestible formats for traditional finance (TradFi) investors. Since launch, Reflexivity Research has partnered with some of the largest financial companies in the world and counts readers across major hedge funds, public company C-Suites and the most respected family offices. You can subscribe at www.reflexivityresearch.com

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Introduction

Ethereum, launched in 2015 by developer Vitalik Buterin, is a groundbreaking decentralised blockchain platform designed for smart contracts and decentralised applications (DApps). Unlike Bitcoin, which primarily functions as a digital currency, Ethereum offers a versatile platform for building blockchain-based applications. Its native cryptocurrency, Ether (ETH), fuels transactions and incentivises network participants.

Ethereum operates on a peer-to-peer network, ensuring security, transparency, and trust through its blockchain technology. This distributed ledger records all transactions across a network of computers, making it resistant to fraud and tampering. A standout feature of Ethereum is its ability to execute **smart contracts**: self-executing contracts with terms directly written into code. This capability has revolutionised various industries by enabling numerous decentralised applications.

What can Ethereum do?

Banking for Everyone

Not everyone has access to financial services. But all you need to access Ethereum and the lending, borrowing and savings products built on it is an internet connection.

An open internet

Anyone can interact with Ethereum network or build applications on it. This allows you to control your own assets and identity, instead of them being controlled by a few mega-corporations.

A peer-to-peer network

Ethereum allows you to coordinate, make agreements or transfer digital assets directly with other people.
You don't need to rely on intermediaries.

Censorhip-resistant

No government or company has control over Ethereum. Decentralization makes it nearly impossible for anyone to stop you from receiving payments or using services on Ethereum.

Commerce guarantees

Customers have a secure, built-in guarantee that funds will only change hands if you provide what was agreed. Likewise, developers can have certainty that the rules won't change on them.

Composable products

All apps are built on the same blockchain with a shared global state, meaning they can build off each other (like Lego bricks). This allows for better products and experiences and assurances that no-one can remove any tools apps rely upon.

Source: https://ethereum.org/

In September 2022, Ethereum underwent a significant upgrade known as "The Merge," transitioning from a Proof of Work (PoW) to a Proof of Stake (PoS) consensus mechanism. This upgrade, part of the Ethereum 2.0 initiative, significantly enhanced scalability and reduced energy consumption by approximately 99.95%, addressing environmental concerns associated with PoW.

Ethereum supports the creation of decentralised finance (DeFi) applications, non-fungible tokens (NFTs) and other innovations, expanding its utility beyond a digital currency. Its decentralised nature facilitates faster, cheaper cross-border transactions without intermediaries, offering substantial advantages over traditional financial systems. Key features include the Ethereum Virtual Machine (EVM) for executing smart contracts and Decentralised Autonomous Organisations (DAOs) governed by these contracts.

Despite challenges such as scalability issues, network congestion and regulatory scrutiny, Ethereum has achieved significant mainstream acceptance. Major financial institutions and corporations are actively exploring its potential applications, solidifying Ethereum's position as the second-largest cryptocurrency by market capitalization and a leader in the blockchain ecosystem.

Ethereum

Source: Blockgeeks

Ethereum makes building decentralized applications easier than ever. Instead of needing to launch a new blockchain for every dapp, you can build thousands of applications on top of Ethereum's platform.

Decentralized Networks

- Immutable
- Tamper Proof
- Secure

With no central point of failure and security by cryptography, any applications are protected against fraud and attacks.

Blockchains

- Trustless
- Global
- Permanent

Every block of information is stored all across the network, leading to a world-wide environment where everyone is in the know.

Primers: Blockchain and Cryptocurrency

A blockchain is a database of transactions that is continuously updated and shared across multiple computers in a network. Each new set of transactions forms a "block," hence the term blockchain. Public blockchains like Ethereum allow anyone to add data, but not remove it. Altering information or cheating the system would require changing data on the majority of computers in the network, which is extremely difficult. This makes decentralised blockchains like Ethereum highly secure.

Cryptocurrency refers to various types of fungible digital tokens secured using blockchain technology. It all began with Bitcoin, which allows value transfers between parties without needing a middleman, relying instead on open and freely available Bitcoin code.

Assets like Bitcoin and Ether are called “cryptocurrencies” because their security is ensured by cryptography, not by trusting an institution or corporation.

Ethereum has its own native cryptocurrency, Ether (ETH), which is used to pay for certain activities on the network. It can be transferred to other users or exchanged for other tokens on Ethereum. Ether is unique because it is used to pay for the computation required to build and run applications and organisations on Ethereum.

What is Ethereum

Ethereum is a global network of computers that adhere to a set of rules known as the Ethereum protocol. This network serves as a foundation for communities, applications, organisations and digital assets that anyone can create and use.

You can create an Ethereum account from anywhere, at any time, and explore a world of apps or build your own. The core innovation is that you can do all this without relying on a central authority that could change the rules or restrict your access.

Why Use Ethereum?

If you're seeking more resilient, open and trustworthy methods for global coordination, creating organisations, building apps and sharing value, Ethereum is ideal for you. Ethereum is a collaborative story written by all of us, inviting you to discover and build incredible worlds together.

Ethereum is also invaluable for individuals facing uncertainty about the security, soundness, or mobility of their assets due to external forces beyond their control.

Ethereum Use Case

Cheaper and Faster Cross-Border Payments

Stablecoins are a type of cryptocurrency designed to maintain a stable value, typically pegged to a fiat currency like the US dollar. They achieve this stability through various mechanisms, with the two most common being:

1. Fiat-collateralized: The stablecoin is backed 1:1 by reserves of the fiat currency. Fiat-collateralized stablecoin issuers like Circle hold large amounts of fiat currency as reserves in bank accounts or other financial instruments like government treasuries. They earn interest on these reserves.

2. Crypto-collateralized: The stablecoin is backed by other cryptocurrencies.

Ethereum enables stablecoins through its robust blockchain platform, which supports the creation and execution of smart contracts. These smart contracts can automate the issuance, redemption, and management of stablecoins, ensuring transparency and trust without the need for centralized intermediaries. Notable stablecoins on Ethereum include USDT (Tether), USDC (USD Coin), and DAI.

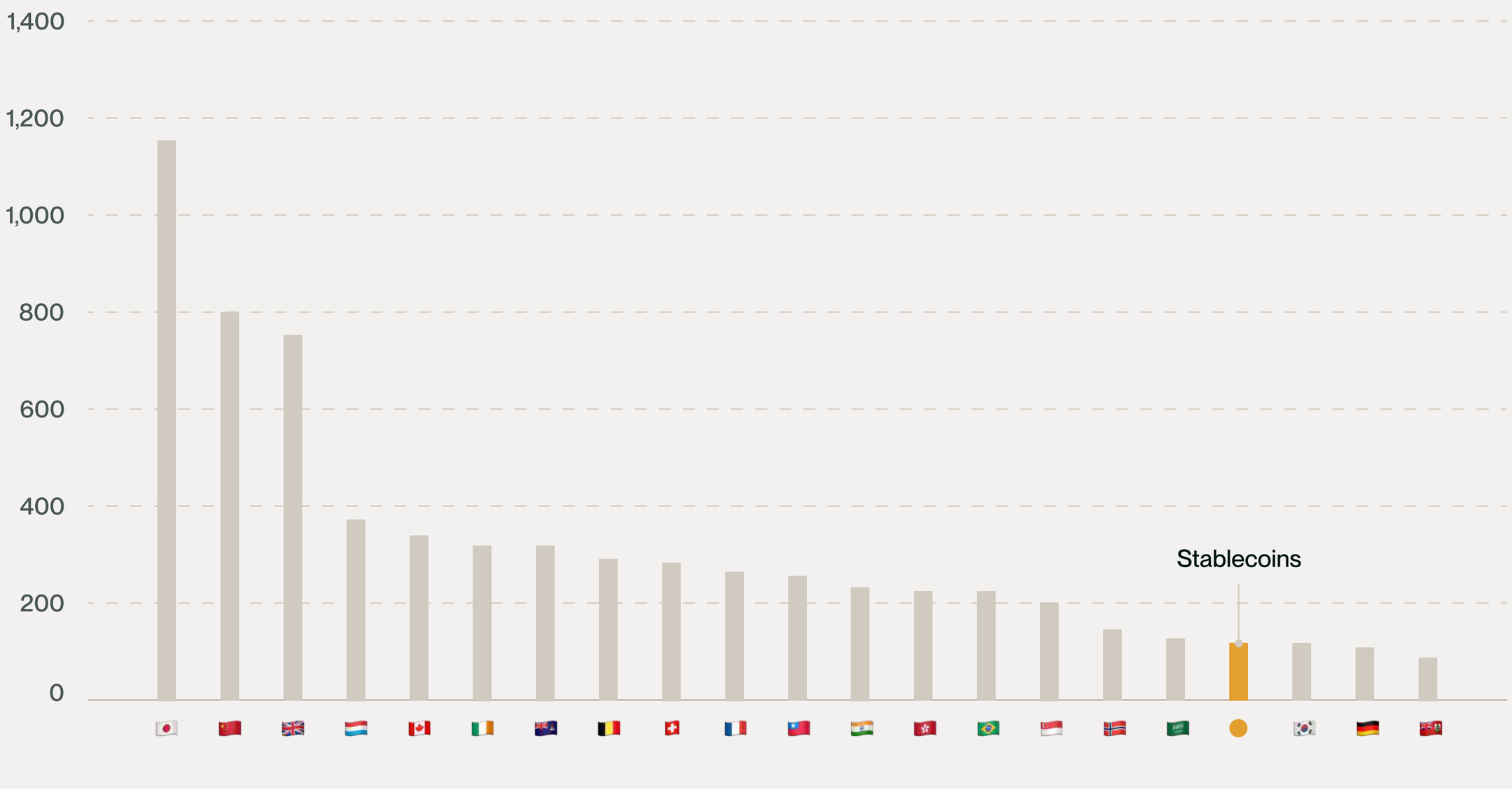
Ethereum and stablecoins simplify sending money overseas, reducing transfer time to mere minutes compared to several business days or even weeks with traditional banks. This process is also much cheaper, with no extra fees for high-value transactions and no restrictions on where or why you send your money.

Ethereum Use Case: Stablecoins

Stablecoins and US Treasuries

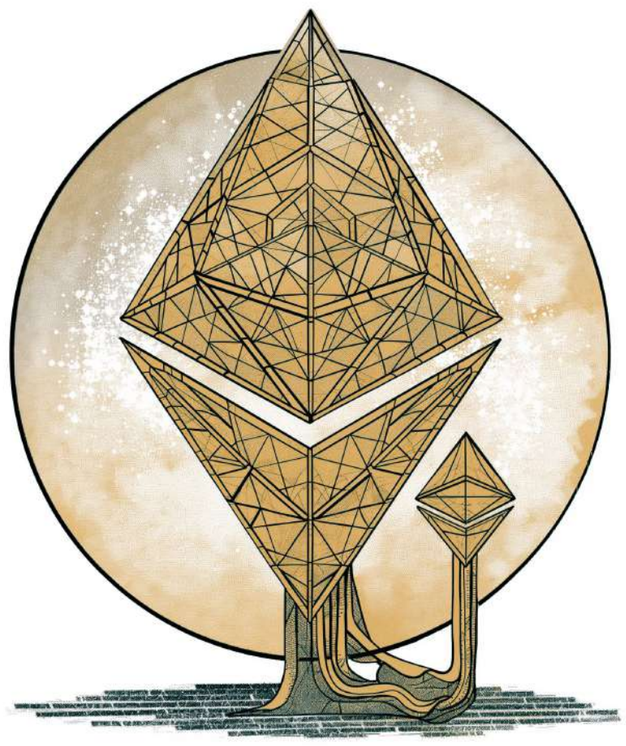
Stablecoin issuers are rapidly becoming a significant source of demand for U.S. Treasury notes as concerns about Washington's debt management intensify. Data from Tagus Capital reveals that issuers now collectively hold over $120 billion in U.S. Treasury notes, ranking them as the 18th largest holders of U.S. debt globally. This positions them ahead of major current account surplus nations such as Germany and South Korea. Notably, Tether Ltd, the issuer of tether (USDT), the world's largest dollar-pegged cryptocurrency by market value, holds approximately $91 billion in Treasuries. Meanwhile, Circle, the issuer of USDC, holds short-dated U.S. debt, including repos, valued at $29 billion. This new development has policy makers shifting sentiment to be more positive toward Ethereum, blockchain, and cryptocurrencies, which should be a positive tailwind for adoption and thereby future price appreciation.

Major Foreign Country Holders of United States Treasury Securities (USD Billions)



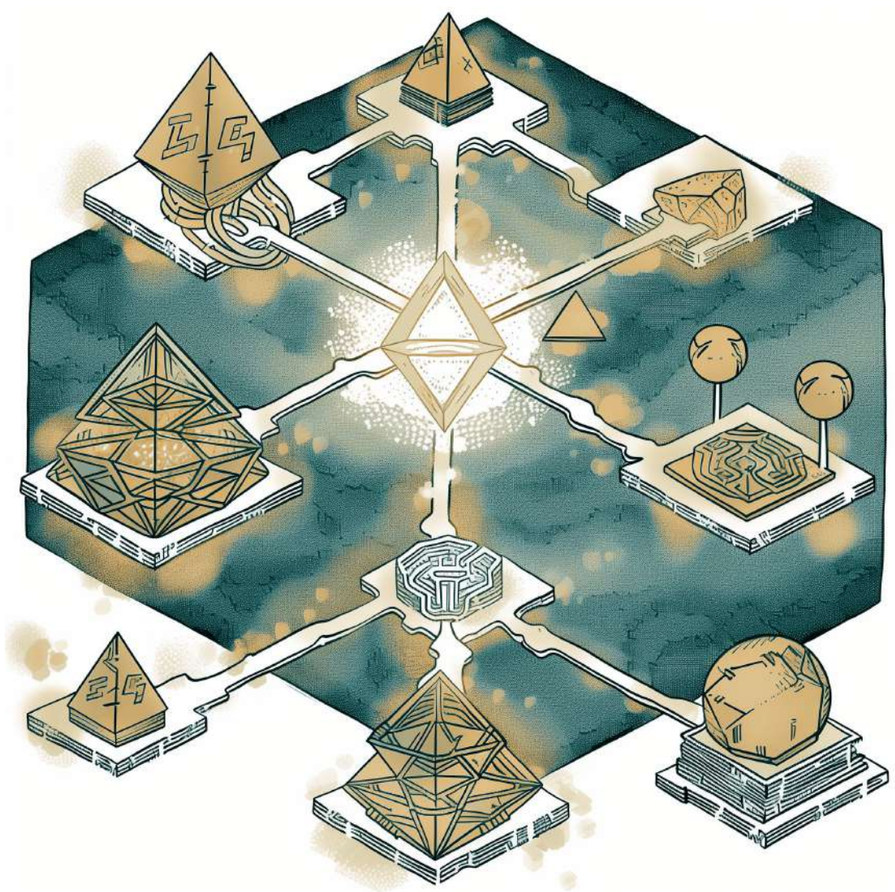
Quick Help in Times of Crisis

In regions facing political repression or economic hardship, traditional financial institutions often fail to provide necessary protection or services. For people in countries like Venezuela, Cuba, Afghanistan, Nigeria, Belarus and Ukraine, cryptocurrencies have been the quickest and sometimes the only way to retain financial agency during crises. Cryptocurrencies like Ethereum provide unfettered access to the global economy and stablecoins offer a store of value when local currencies collapse due to hyperinflation.



Empowering Creators

In 2021 alone, artists, musicians, writers and other creators earned around $3.5 billion collectively using Ethereum, making it one of the largest global platforms for creators, alongside Spotify, YouTube and Etsy.



Empowering Gamers

Play-to-earn games, where players are rewarded for their gameplay, are transforming the gaming industry. Traditionally, trading or transferring in-game assets for real money is often prohibited, forcing players to use black market websites, which pose security risks. Blockchain gaming promotes a trusted in-game economy, allowing players to trade in-game tokens for real money, thus rewarding their playtime and enhancing the gaming experience.

Who Runs Ethereum?

Ethereum isn't controlled by any single entity. It functions through a network of computers running software that adheres to the Ethereum protocol, contributing to the Ethereum blockchain. These computers, known as nodes, can be operated by anyone. To help secure the network, participants can stake ETH, with a minimum of 32 ETH required, allowing participation without needing permission.

The development of Ethereum's source code is a collaborative effort, not managed by one group. Anyone can propose changes to the protocol and discuss potential upgrades. Multiple independent organisations produce various implementations of the Ethereum protocol in different programming languages. These projects are usually developed openly, inviting community contributions.

Ethereum key data points
as of June 28, 2024

Projects built on Ethereum	4K+
Accounts (wallets) with an ETH balance	96M+
Smart contracts on Ethereum	53.3M+
Value secured on Ethereum	$410B
Creator earnings on Ethereum in 2021	$3.5B
Number of transactions today	1.194M

Source: https://ethereum.org/en/what-is-ethereum/

What Are Smart Contracts?

Smart contracts are computer programs that reside on the Ethereum blockchain and execute when triggered by a transaction from a user. These programs enhance Ethereum's flexibility, allowing it to support a wide range of applications. They serve as the foundational elements for decentralised apps and organisations.

Unlike traditional products that may change terms of service or remove features, once a smart contract is published to Ethereum, it remains online and operational as long as Ethereum exists. Not even the author can take it down. Being automated, smart contracts do not discriminate against any user and are always available for use.

Popular examples of smart contracts include lending apps, decentralised trading exchanges, insurance, quadratic funding, social networks and NFTs; essentially, anything you can imagine.

Introduction to Smart Contracts

Source: https://ethereum.org/en/smart-contracts/

Smart Contract Basics

Fundamental building blocks of Ethereum's application layer. Stored on the blockchain, they follow "if this then that" logic and execute as defined by their code.

Origin

Term coined by Nick Szabo. In 1994, he introduced the concept, and in 1996, he explored its potential.

Vision

Szabo envisioned a digital marketplace where cryptographically-secure processes enable transactions and business functions without trusted intermediaries.

Trust in Conventional Contracts

Traditional contracts require trusted individuals to follow through. Example: A bicycle race bet where the loser might refuse to pay, illustrating trust issues.

Smart Contract Metaphor

Like a vending machine: specific inputs guarantee predetermined outputs. If all requirements are met, the output is dispensed; if not, it isn't.

Automatic Execution

Executes unambiguous code deterministically when conditions are met, eliminating the need for trusted intermediaries.

Example

A smart contract holding funds in escrow for a child, releasing them only after a specific date, or transferring a car's title upon payment.

Predictable Outcomes

Executes based on the conditions written in the code, ensuring consistent and precise results.

Public Record

Useful for audits and tracking. Ethereum smart contracts are on a public blockchain, allowing instant tracking of asset transfers and related information.

Privacy Protection

Protects privacy as Ethereum is pseudonymous, with transactions tied to a unique cryptographic address rather than an identity.

Visible Terms

Like traditional contracts, the terms of a smart contract are visible before interaction, ensuring transparency and scrutiny.

Smart Contract Use Cases

Can perform computations, create currency, store data, mint NFTs, send communications, and generate graphics. Examples include lending apps, decentralized exchanges, insurance, quadratic funding, social networks, and NFTs.

How does a Smart Contract work?

Identify Agreement

Multiple parties identify the cooperative opportunity and desired outcomes.

Set Conditions

Smart contracta are executed automatically when certain conditions are met.

Code business logic

A computer program is written.

Encryption and blockchain technology

Encryption provides a secure transfer of messages between parties.

Execution and processing

The code is executed and outcomes are memorialized.

Network updates

All the nodes on the network update their ledger.

Ether: Ethereum's Cryptocurrency

On the Ethereum network, many actions require computation by the Ethereum Virtual Machine and this isn't free. These computations are paid for with Ethereum's native cryptocurrency, ETH, so having some ETH is essential for network use.

Ether is a purely digital currency, allowing for instant transactions to anyone, anywhere in the world. Its supply is decentralised and transparent, not controlled by any government or corporation. Ether is issued precisely according to the protocol, exclusively to stakers who help secure the network.

What is ETH? Currency for Our Digital Future

ETH is a digital, global currency and the primary asset used within Ethereum applications. It is a scarce digital currency, similar to Bitcoin, that you can use on the internet. Here's what makes ETH unique and valuable compared to traditional money:

Ownership and Control

With ETH, you control your own funds using a wallet, without needing any third parties. This makes you effectively your own bank.

Security

ETH transactions and wallets are protected by proven cryptographic methods, ensuring the safety of your assets.

Peer-to-Peer Payments

You can send ETH directly to anyone, anywhere, at any time, without the need for intermediary services like banks.

Decentralisation

ETH is decentralised and global, meaning no single entity can control its supply or terms of use.

Accessibility

All you need to use ETH is an internet connection and a wallet. You don't need a bank account to send or receive payments.

Divisibility

ETH can be divided up to 18 decimal places, allowing you to buy and use very small fractions.

Unique Features of ETH

ETH is integral to the Ethereum network, serving as the fuel that powers transactions and operations. When you use an Ethereum application or send ETH, you pay a fee in ETH. This fee incentivises block producers to process and verify your transactions. Validators, who stake their ETH to secure the network, are rewarded with newly issued ETH, maintaining Ethereum's security and decentralisation.

Consistency and Transparency

Smart contracts on Ethereum execute exactly as coded, ensuring predictable outcomes and eliminating the need for human interpretation. All transactions are recorded on a public blockchain, making it easy to audit and track assets. Ethereum transactions are pseudonymous, linking to cryptographic addresses rather than personal identities, providing a layer of privacy protection.

ETH in the Financial System

ETH underpins a peer-to-peer financial system accessible to everyone. You can use ETH as collateral to create other cryptocurrency tokens on Ethereum, borrow, lend and earn interest on ETH and other ETH-backed tokens. This ecosystem is part of the decentralised finance (DeFi) movement, which aims to build a more open and accessible financial system.

Expanding Uses for ETH

Since 2015, ETH has evolved from simple transactions to numerous applications. Today, you can stream payments in real-time, swap ETH with other tokens, earn interest on ETH and Ethereum-based tokens and access stablecoins for less volatile value.

Why ETH is Valuable

Comparing Ethereum to traditional tech platforms like those using the Transmission Control Protocol/Internet Protocol (TCP/IP) reveals Ethereum's unique value. Conventional tech companies operate on protocols like TCP/IP, but investors can't directly invest in this core layer. Ethereum, however, introduces a groundbreaking model where investors can own a stake not only in the network's transactions but also in the fundamental protocol layer itself. This unique characteristic makes Ethereum a distinct investment opportunity, allowing ownership in the very foundation of the decentralized internet.

For users of Ethereum, it’s essential for paying transaction fees. Others see it as a digital store of value due to its decreasing issuance rate over time. Additionally, ETH is valuable in financial applications on Ethereum, where it can be used as collateral for crypto loans or as a payment system. Many also view ETH as an investment, similar to Bitcoin and other cryptocurrencies.

Tokens on Ethereum

Ethereum hosts thousands of tokens, each with unique functions. These include stablecoins that mirror traditional currencies, governance tokens for voting in decentralised organisations and collectible tokens (NFTs) representing unique digital assets. The ability to create and trade these tokens opens new possibilities and markets.

Ethereum's flexibility and programmability allow developers to create a wide range of applications and use cases for ETH, continually expanding its utility and value in the digital economy.

Factors Contributing to ETH's Value

Smart Contract Capabilities and dApps

Ethereum introduced smart contracts, self-executing contracts with terms directly written into code, enabling decentralised applications (dApps) to run without downtime, fraud, or third-party interference, driving innovation across sectors, especially DeFi.

Network Effect

Ethereum has a significant network effect as the most actively used blockchain, with a growing ecosystem of users, developers, and applications, making the network robust and valuable.

Utility

Ether (ETH) serves as "gas" for executing transactions and smart contracts, transferring funds, pricing digital assets, and as a form of payment, enhancing its value proposition as a digital asset.

DeFi Leadership

Ethereum hosts over 60% of the DeFi economy, recreating traditional financial systems (lending, borrowing, trading) using blockchain technology, operating without intermediaries, offering greater accessibility and potential returns.

NFTs (Non-Fungible Tokens)

Ethereum is the leading platform for NFTs, unique digital assets representing ownership of items or content (art, music, virtual real estate), driving significant interest and value to the network.

Interoperability and Standardisation

Ethereum developed standards like ERC-20 for tokens and ERC-721 for NFTs, facilitating interoperability between applications and tokens, ensuring new projects integrate and interact with existing ones, enhancing the ecosystem.

Technological Advancements

Ethereum's upgrades, including Ethereum 2.0 and a proof-of-stake (PoS) consensus mechanism, aim to improve scalability, security, and energy efficiency, enhancing utility and adoption.

Developer Community and Innovation

Ethereum has one of the most active developer communities, with its open-source nature encouraging continuous innovation, platform improvements, new applications, and finding new use cases for the technology.

Scarcity and Tokenomics

The implementation of EIP 1559 introduced a deflationary mechanism by burning a portion of transaction fees, potentially increasing ETH's value over time by reducing supply.

Popular Tokens on Ethereum

Source: https://ethereum.org/en/what-is-ethereum/

Stablecoins

Tokens that mirror the value of traditional currencies like the US dollar, addressing the volatility problem common with many cryptocurrencies.

Governance Tokens

Tokens that grant voting power in decentralized organizations, allowing holders to influence decisions and governance.

Non-utility Coins

Easily created tokens, often with dubious value or intentions. It's crucial to research thoroughly before investing in or using these tokens.

Collectible Tokens

Also known as non-fungible tokens (NFTs), these represent unique digital assets such as game items, digital art, or other one-of-a-kind items.

Ethereum's History

2013

Whitepaper Released
November 27, 2013

Vitalik Buterin introduces Ethereum, outlining its concept and vision.

2014

Ether Sale
July 22, 2014

Fundraising event where Ether was sold to support Ethereum's development.

Yellowpaper Released
April 1, 2014

Technical definition of Ethereum by Dr. Gavin Wood.

2015

Frontier
July 30, 2015

Initial launch of the Ethereum network, intended for developers.

Frontier Thawing
September 7, 2015

Lifted gas limits and introduced the difficulty bomb.

2016

Homestead
March 14, 2016

First stable release with protocol changes and upgrades.

DAO Fork
July 20, 2016

Response to the DAO hack, leading to the creation of Ethereum Classic.

Tangerine Whistle
October 18, 2016

Addressed denial of service attacks.

Spuriours Dragon
November 22, 2016

Added replay attack protection and more DoS attack mitigations.

2017

Byzantium
October 16, 2017

Reduced block rewards, added new cryptographic methods, delayed difficulty bomb.

2019

Constantinople
February 28, 2019

Reduced block mining rewards, optimized gas costs, prepped for PoS.

Istanbul
December 8, 2019

Enhanced performance, DoS resilience, and Zcash interoperability.

2020

Muir Glacier
January 2, 2020

Delayed the difficulty bomb.

Staking Deposit Contract Deployed
October 14, 2020

Introduced staking mechanism.

Beacon Chain Genesis
December 1, 2020

Initiated the transition to Proof-of-Stake (PoS).

2021

Berlin
April 15, 2021

Optimized gas costs, added new transaction types.

London
August 5, 2021

Introduced EIP-1559 for transaction fee reform.

Altair
October 27, 2021

Added sync committees, increased validator penalties.

Arrow Glacier
December 9, 2021

Further delayed the difficulty bomb.

2022

Gray Glacier
June 30, 2022

Further delayed the difficulty bomb.

Bellatrix
September 6, 2022

Prepared the Beacon Chain for The Merge.

Paris (The Merge)
September 15, 2022

Completed the transition from PoW to Pos.

2023

Shanghai-Capella ("Shapella")
April 12, 2023

Enabled staking withdrawals.

2024

Cancun-Deneb ("Dencun")
March 13, 2024

Improved scalability with Proto-Danksharding.

Introduction to DeFi

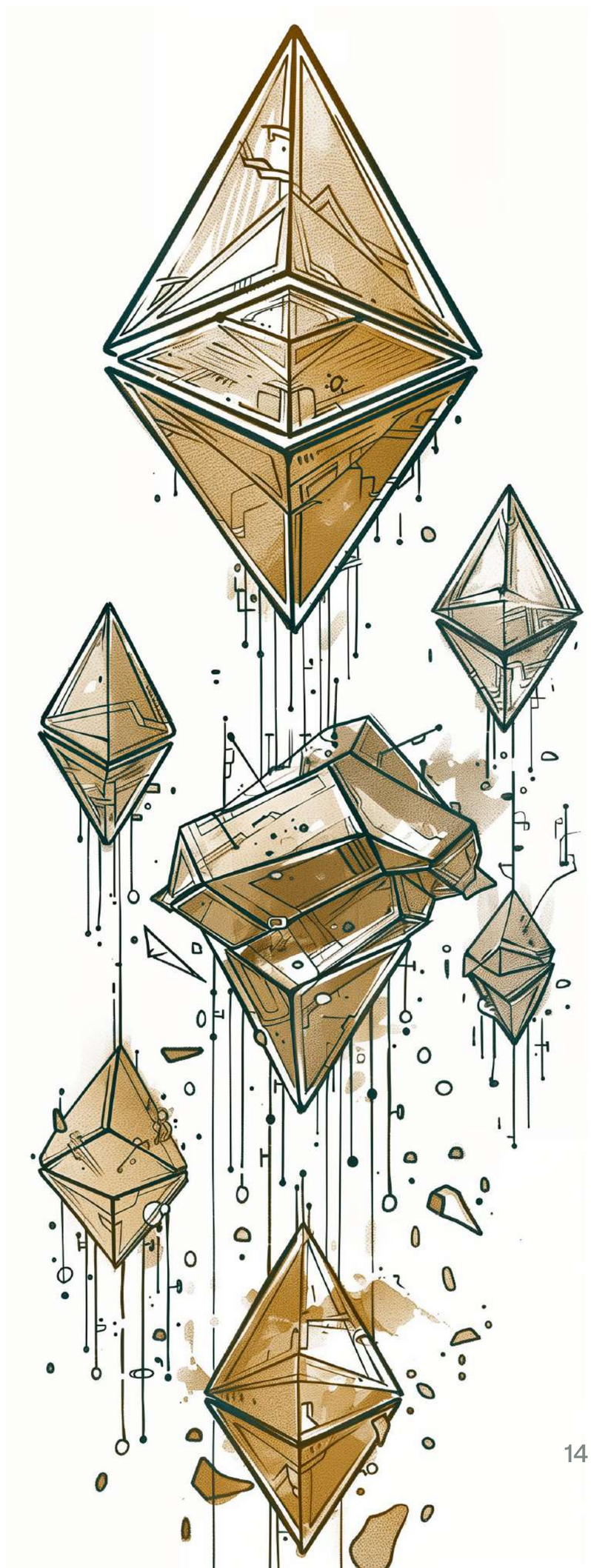
DeFi, short for decentralised finance, is an open and global financial system tailored for the internet age. Unlike traditional financial systems, which are opaque, heavily regulated and reliant on outdated infrastructure, DeFi gives users complete control and transparency over their finances. It provides access to global markets and alternatives to local currencies or banking options.

With DeFi products, anyone with an internet connection can access financial services and these products are often owned and maintained by their users. As of now, tens of billions of dollars in cryptocurrency have flowed through DeFi applications and this number continues to grow daily.

What is DeFi?

DeFi is a collective term for financial products and services that are accessible to anyone with an internet connection. With DeFi, markets are always open and there are no central authorities to block payments or restrict access. Services that were once slow and prone to human error are now automated and safer, managed by transparent code that anyone can inspect.

The DeFi space is thriving, offering opportunities to lend, borrow, trade, earn interest and more. For example, Argentinians have used DeFi to combat inflation, companies have started streaming real-time wages to employees and individuals have taken out and repaid loans worth millions without the need for personal identification.



DeFi vs Traditional Finance: Programmable Money

Ethereum’s smart contracts enable programmable money, allowing for a range of financial services that traditional systems can't offer, such as lending, borrowing, scheduling payments and investing in index funds. These functionalities combine the control and security of Bitcoin with the versatile services of traditional financial institutions.

DeFi Applications

DeFi offers decentralised alternatives to most financial services and introduces new financial products:

Send and Stream Money Globally

Ethereum enables secure, global transactions similar to sending an email.

Access Stable Currencies

Stablecoins on Ethereum maintain value stability, ideal for savings and spending.

Borrowing

DeFi allows both peer-to-peer and pool-based borrowing, often with privacy and better interest rates.

Tax Efficiencies

Borrowing against ETH can provide liquidity without triggering taxable events.

Flash Loans

Instant, collateral-free loans enabled by liquidity pools and smart contracts.

Crypto Savings

Earn interest on your crypto by lending it out.

Exchange Tokens

Trade various tokens on decentralised exchanges without losing control of your assets.

Advanced Trading

Access advanced trading options like limit orders and margin trading on decentralised platforms.

Portfolio Growth

Use automated fund management products to grow your portfolio.

Crowdfunding and Quadratic Funding

Use Ethereum for transparent, global crowdfunding and community-driven funding models.

Insurance

Decentralised insurance provides transparent, quick and affordable coverage.

How Does DeFi Work?

DeFi replaces traditional financial intermediaries with smart contracts, which are programmable, transparent and immutable. These contracts handle transactions and funds based on predefined conditions, without the need for human intervention. Smart contracts on Ethereum enable financial transactions that are secure, transparent and open to scrutiny by anyone.

Why Ethereum for DeFi?

Ethereum is the ideal foundation for DeFi because:

1 **Decentralisation**

No single entity controls Ethereum or its smart contracts.

2 **Interoperability**

DeFi products on Ethereum can seamlessly interact with each other.

3 **Built-in Cryptocurrencies**

Ethereum supports native tokens and cryptocurrencies, simplifying transactions and asset management.

4 **Financial Freedom**

Users maintain control over their funds without custodial risks.

DeFi on Ethereum can be thought of in layers:

The Blockchain

Ethereum's transaction history and account state.

The Assets

ETH and other tokens

The Protocols

Smart contracts providing financial functionalities.

The Applications:

User interfaces to manage and access these protocols.

Building DeFi

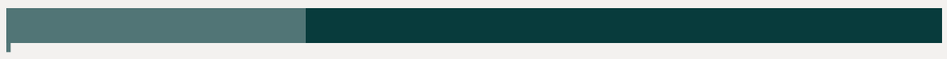
DeFi is an open-source movement. Its protocols and applications are open for anyone to inspect, fork and innovate upon. This openness fosters innovation and allows for unique combinations of DeFi protocols to create new financial opportunities.

Below is a cross comparison of the respective DeFi Total Value Locked compared to market cap for both Bitcoin and Ethereum, highlighting how much more active Ethereum's DeFi market is compared to Bitcoin.

Bitcoin
$1.39 Trillion Market Cap

TVL
$1.2B

Ethereum
$459 Billion Market Cap



TVL
$147B

Ethereum's Energy Consumption

On September 15, 2022, Ethereum underwent a significant upgrade known as The Merge, transitioning from a proof-of-work (PoW) to a proof-of-stake (PoS) consensus mechanism. This was Ethereum's most substantial upgrade, reducing its energy consumption by 99.95%.

Benefits of The Merge

Energy Efficiency

The transition to PoS dramatically cut the energy required to secure the Ethereum network, making it a low-carbon blockchain.

Deflationary Issuance

The transition to PoS eliminates the need to issue new coins to miners, which advocates argue helps prevent inflation. While new coins are still being created to pay stakers who are chosen to update the ledger, they're issued at a lower rate. In addition, staking itself removes coins from circulation.

Scalability

The Merge also set the stage for future scalability improvements, allowing Ethereum to handle more transactions efficiently.

Date of The Merge
September 15, 2022

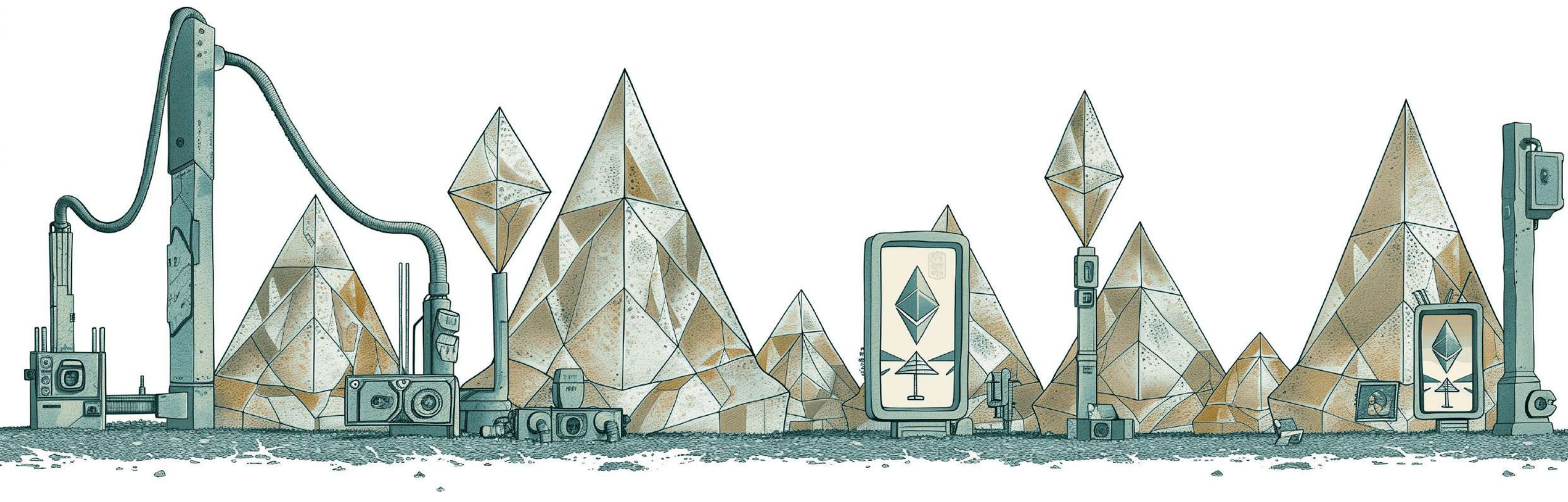
Energy Consumption
Reduced by 99.95%

Environmental Impact
Transition to a low-carbon blockchain

Token Issuance
Coin issuance reduced and large portion of supply removed from circulation due to staking.

Scalability
Enhanced potential for future scalability improvements

Source: https://ethereum.org/en/what-is-ethereum/

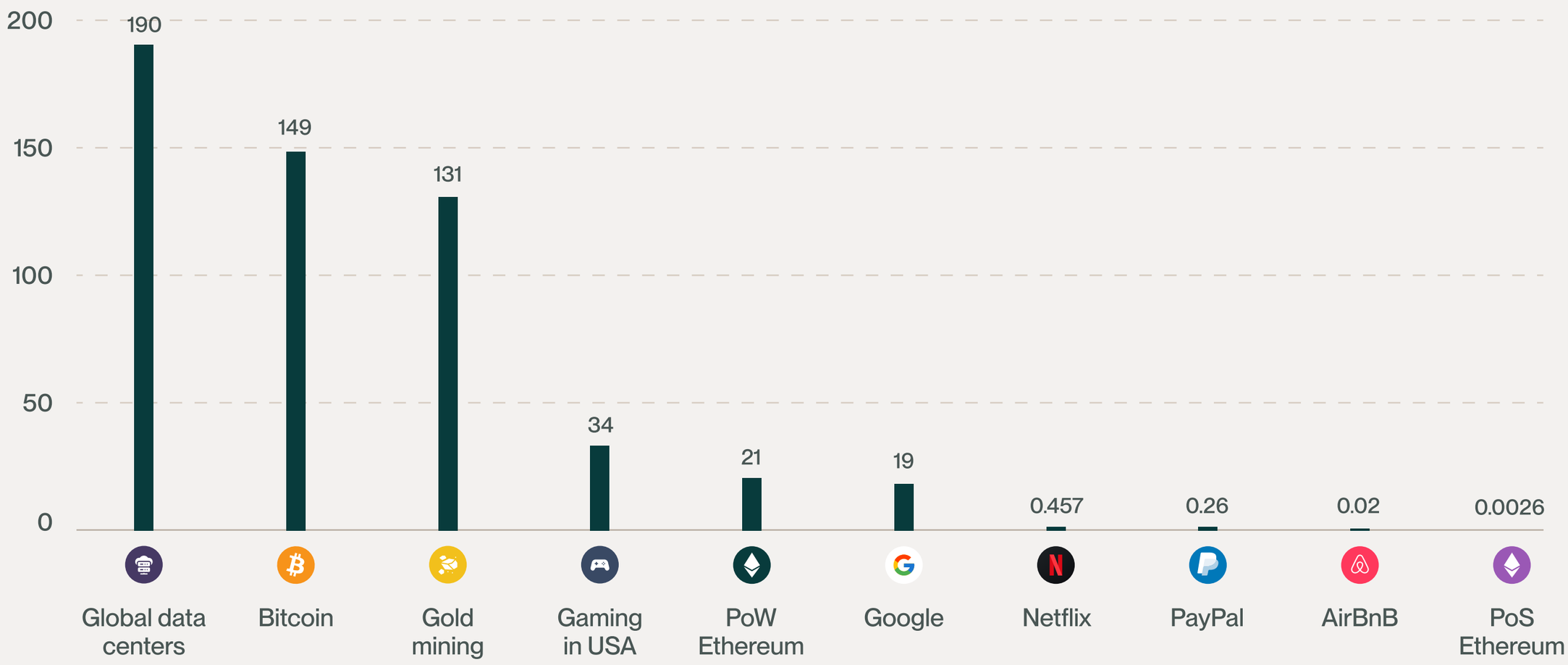


Ethereum's Energy Expenditure:
Current Energy Consumption

Ethereum's energy consumption is now approximately 0.0026 TWh per year across the global network. This estimate, provided by the Crypto Carbon Ratings Institute (CCRI), corresponds to annual carbon emissions of 870 tonnes of CO2e.

Annual Energy Consumption in TWh/yr

Source: https://ethereum.org/en/what-is-ethereum/



The chart above displays the estimated energy consumption in TWh/yr for Ethereum, compared to several other products and industries. The estimates provided are sourced from publicly available information, accessed in July 2023

Understanding Energy Estimates

Getting accurate estimates for energy consumption is complex, especially for systems with extensive supply chains or diverse deployment details. Estimates can vary depending on what aspects are included, such as direct system maintenance or indirect costs like content production and office operations.

A Green Application Layer

Ethereum's energy consumption is now very low and the network supports a growing regenerative finance (ReFi) community. ReFi applications use DeFi components to create financial systems with positive environmental impacts. This movement, part of the broader "solarpunk" ethos, aligns technological advancement with environmental stewardship. Platforms like Gitcoin facilitate climate-focused funding rounds, promoting environmentally conscious development on Ethereum's application layer. Through these initiatives, Ethereum is becoming an environmentally and socially net-positive technology.

Ethereum in the Financial Market

Ethereum as an Investment Asset

Ethereum has become a popular investment asset among institutional investors aiming to diversify portfolios and leverage the benefits of smart contracts and decentralised applications. As of June 19th 2024, there are over 273 million Ethereum wallet addresses, with approximately 40 million holding at least $1 in value. This significant retail adoption underscores Ethereum's widespread acceptance and usage.

Overview of Ethereum Spot ETFs Filed in the United States

Interest in Ethereum spot ETFs has surged, reflecting a growing trend in cryptocurrency investments. These ETFs allow investors to gain exposure to Ethereum without directly owning the cryptocurrency, making investment easier and more regulated.

In 2024, the U.S. Securities and Exchange Commission (SEC) approved the first Ethereum spot ETFs, a major milestone that simplifies access to Ethereum investments. These ETFs are physically backed by actual Ether, providing a secure and regulated investment option for a broader range of investors. These ETFs are speculated to go live in early July of 2024 for trading.

Several major companies have filed for Ethereum spot ETFs. BlackRock filed for the iShares Ethereum Trust, designed to track Ethereum's performance, with Coinbase Global Inc. as the custodian. Bitwise has also filed for a spot Ethereum ETF, aiming to offer innovative crypto investment products. Additionally, ARK Invest and 21Shares have jointly filed for a spot Ethereum ETF, with Coinbase Custody Trust Company and Delaware Trust Company managing custodial and trustee duties.

These ETFs work by holding actual Ether, allowing the ETF shares to reflect Ethereum's market price minus management fees. This structure provides an accessible and liquid investment method, traded on traditional stock exchanges, adding regulatory oversight and security.

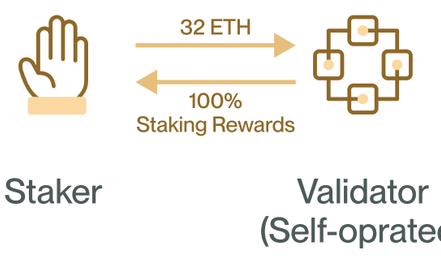
Despite the benefits, Ethereum spot ETFs come with challenges, such as volatility linked to Ether's price and ongoing regulatory scrutiny. These factors could impact their operation and market acceptance.

Overall ETH ETFs are set to attract a diverse range of investors, enhancing Ethereum's adoption and integration into mainstream finance.

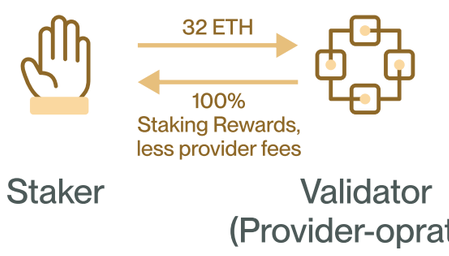
Ethereum Staking

Crypto staking enables users to participate in the governance and consensus of a Proof-of-Stake blockchain, earning rewards for their contribution. Unlike Proof-of-Work blockchains, which use energy-intensive miners, PoS networks elect validators who stake collateral to validate and add new blocks. Validators earn rewards when their proposed block reaches consensus, verified by other validators. If the network deems the block invalid, the validator is penalised by having some of their staked holdings slashed. This ensures the addition of verifiable transactions, maintaining network security.

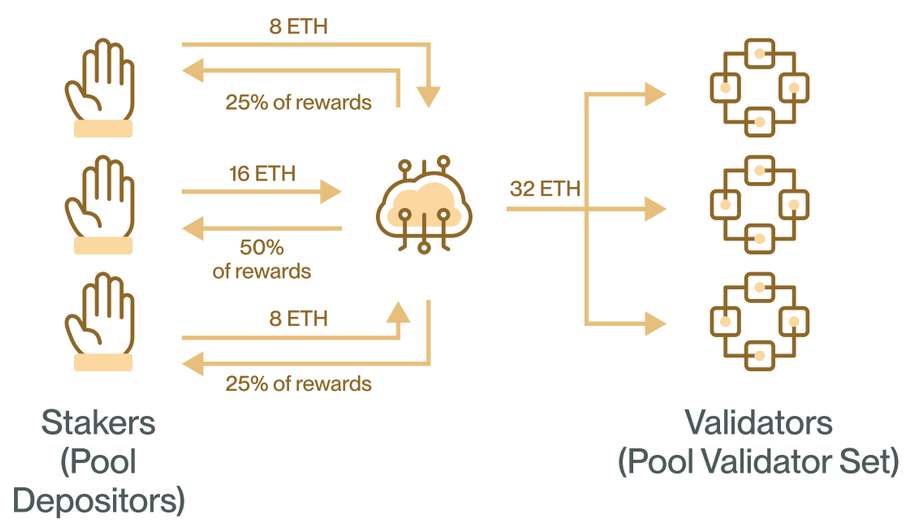
Solo Staking



Staking as a Service



Pooled Staking



Staking on-chain can be complex. Validators must lock up their staked holdings for a period known as the bonding period, which varies by network and often restricts unstaking until completion. Additionally, many networks have an unbonding period before validators can withdraw rewards, complicating quick access to funds.

Benefits of Staking:

Earning Rewards

Validators receive rewards for their contributions.

Improving Network Security

Staking helps maintain blockchain integrity.

Environmental Sustainability

PoS networks are more energy-efficient compared to PoW networks.

Risks of Staking:

Penalties

Validators can be penalised for going offline or engaging in malicious behaviour.

Bonding and Unbonding Periods

These periods restrict access to staked funds, affecting liquidity.

Overall, staking provides an opportunity for ETH holders and other crypto enthusiasts to actively participate in network operations while earning passive income.

To become a validator, a user must stake at least 32 ETH. However, for those who cannot meet this requirement or prefer not to operate their own validator node, there are alternative solutions:

1

Staking Pools

Users can join groups that pool their resources to reach the 32 ETH minimum.

2

Staking-as-a-Service

Third-party providers handle the technical details of running a validator node.

3

Centralised Exchanges

Some exchanges offer staking services for smaller amounts of ETH.

Staking Made Simple with Valour

Valour's Staking ETPs enable investors to earn passive rewards on their crypto holdings by participating in blockchain operations. Staking involves allocating crypto as collateral to support the blockchain, in return for network rewards. With Valour's Staking ETPs, investors can earn additional income beyond the base exposure of their underlying assets.

Valour's Staking ETPs remove the technical complexities associated with individual staking. By partnering with leading staking infrastructure providers, Valour handles all technical aspects, making staking more accessible and seamless for investors. These ETPs allow investors to contribute to the future of decentralised finance, ensuring network security and promoting long-term success and adoption.

Valour's ETPs also benefit from slashing insurance provided by its staking partners, offering protection against the risk of losing staked tokens due to network issues or other factors. This, combined with the 100% collateralisation feature of Valour's asset-backed program, provides additional safeguards over direct staking.

Our Partners

Valour has partnered with top regulated custodians and staking service providers to structure its staked products. The Ethereum Physical Staking ETP is custodied by VQF-registered Copper Markets (Switzerland) AG, with staking services provided by industry leader Blockdaemon. Valour prioritises optimal security for the product's underlying assets, ensuring seamless, non-custodial and fully collateralized staking at all times.

Ethereum (ETH) Zero

Another ETH product that Valour offers is Ethereum Zero which is an exchange-traded product (ETP) that precisely tracks the price of ETH without charging management fees, making investment in the world's second largest digital asset easier, more secure and more cost-effective than all other options.

By offering both of these products, users are able to gain exposure to Ethereum in a fee efficient manner whilst also availing of the staking rewards.

Below is a table detailing the benefits of Valour's ETP offerings:

Benefits of Valour ETPs

Buy into the Market

1 Valour ETPs are a safe, accessible and easy way to get exposure to the most successful cryptocurrencies.

Transparent and Secure

1Valour ETPs are 100% physically backed and kept safe in cold storage by licensed and regulated institutional custodians.

Flexible and Liquid

1 Valour ETPs can be easily purchased like stocks and bonds on regulated exchanges and via your broker.

Tax Efficient

1 Valour EPs may provide significant investment efficiency.
Depending on your situation, certain tax advantages may apply.
Ask your tax advisor.

Source: Valour.com

Conclusion

In conclusion, Ethereum has solidified its position as a cornerstone of the blockchain ecosystem, offering a multifaceted platform for smart contracts and decentralised applications. Since its launch by Vitalik Buterin in 2015, Ethereum has facilitated the creation of numerous decentralised applications and introduced innovations like smart contracts, revolutionising various industries.

The transition to a PoS consensus mechanism through "The Merge" in September 2022 significantly enhanced Ethereum's scalability and security while reducing its energy consumption by 99.95%. This upgrade aligns with global sustainability goals and addresses previous environmental criticisms of blockchain technology.

Ethereum's utility extends beyond its native cryptocurrency, ETH. It supports DeFi applications, NFTs and stablecoins, providing faster, cheaper cross-border payments and financial solutions in regions facing political and economic instability. The platform empowers creators and gamers, offering new revenue streams and more secure, transparent ecosystems.

Institutional adoption of Ethereum is on the rise, highlighted by the approval of Ethereum spot ETFs in 2024. These ETFs provide a regulated and accessible investment vehicle, reflecting Ethereum's growing acceptance in traditional finance. Companies like Valour are enhancing this landscape with innovative products such as the Ethereum Physical Staking ETP and Ethereum Zero. Valour's Staking ETPs simplify the staking process, enabling investors to earn rewards while contributing to network security and Ethereum Zero offers a cost-effective way to invest in ETH by tracking its price without charging management fees.

Overall, Ethereum's continuous development and widespread adoption underline its importance in the digital asset space, promising a resilient and dynamic future for the global financial system.

valour | REFLEXIVITY RESEARCH

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