

# Ethereum

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**In news—** Ethereum, the world's second most valuable cryptocurrency, has recently completed a significant software overhaul which promises to ramp up security of the cryptocurrency.

## Revamped Ethereum-

- **The revamp, known as 'The Merge,' will cast aside the need for crypto miners and gigantic mining farms,** who had previously driven the blockchain under a mechanism called 'proof-of-work' (PoW).
- **Instead, it has now shifted to a 'proof-of-stake' (PoS) mechanism** that assigns 'validators' randomly to approve transactions and earn a small reward.
- The move to PoS will reduce ethereum's energy consumption by nearly 99.95 per cent.
- Enter 'The Merge' and the shift to the PoS consensus mechanism. Ethereum is still a decentralised platform, but **under the new concept, it would not need miners and mining farms to authenticate transactions anymore.**
- Instead, a validator will be randomly assigned using an algorithm from a pool of people who 'stake' their coins, which essentially means pledging at least 32 Ethereum tokens on the network. This would entirely eliminate the need for miners on the Ethereum network.
- One of the biggest benefits being touted about 'The Merge' is that it will make transactions on the Ethereum network extremely secure.
- Apart from that, it is also being seen as an environmentally conscious move as Ethereum is expected to now consume 99 per cent or so less energy.
- Given that some of the most popular applications of cryptocurrencies such as non-fungible tokens (NFTs) and decentralised finance (DeFi) are based on the Ethereum

network, the overhaul could have far-reaching consequences in the future.

### About Ethereum-

- It is a **decentralised cryptocurrency, meaning that it does not have institutions like banks** approving the transactions that happen on its network the approvals were earlier happening under the PoW consensus mechanism which was essentially done by miners.
- Miners would compete to solve complex mathematical puzzles using a massive infrastructure of cutting edge computer hardware, and the first one to solve the puzzle would be chosen as the validator.
- This method was almost entirely dependent on crypto farms, which are massive warehouses lined with rows of computers which would solve the puzzles.
- There was, however, one big problem – these mining farms were energy guzzlers, leading to one of the biggest criticisms of the crypto industry that they sometimes consumed more electricity than entire countries, and were therefore a big concern in terms of environmental sustainability.
- Some of the examples of other crypto currencies are Bitcoin, Litecoin, Zcash, Stellar Lumen, Tether etc.

### What's next for Ethereum?

At the Ethereum Community Conference, post 'The Merge', the network will undergo further upgrades which he called the "surge," "verge," "purge," and "splurge".

- **Surge:** This refers to the **addition of Ethereum sharding**, which promises to process transactions on the network much faster than now. Sharding basically means dividing transactions across several different chains in a way that will decrease fees and speed up transactions.
- **Verge:** The verge will implement "Verkle trees" and

“stateless clients,” which will allow users on the network to become validators without having to store extensive amounts of data on their machines.

- **Purge:** As the name suggests, this step will **involve purging old network history.**
- **Splurge:** It aims at making sure that the network continues to run smoothly and that the updates to the protocol in the previous sections do not cause any issues.