Crypto Mining and Data Centers Fast Facts

Difference Between Crypto Mine and Data Center

Both crypto mines and data centers are large, temperature controlled, warehouses filled with computers. Data Centers support multiple commercial uses such as e-commerce and cloud computing. They support multiple businesses and customers. Crypto Mines are dedicated solely to crypto mining and support only the owners of the crypto mine.

Energy Intensity

Both Crypto Mines and Data Centers are energy intensive.

For reference the US Department of Energy estimates that about 1MW of power can serve 1000 households.

1 Plant Vogle Reactor (1.2 MW) can serve 1.2 million households OR about 6 Data Centers or Crypto Mines.

Crypto Mines	Data Centers
Two facilities in Dalton 195 MW ~195,000 households	Two facilities in Atlanta 458 MW ~458,000 households
Two facilities in Sandersville 110 MV ~110,000 households	Two facilities in Douglas County 397 MW ~397,000 households

References

What Is Cryptocurrency? A Beginner's Guide | Britannica Money
What Is Cryptocurrency? – Forbes Advisor
Cryptocurrency Explained | Britannica Money
Cryptocurrency vs. Cash | Forbes
Proof of Stake Explained | Forbes
Blockchain Facts | Investopedia
Tracking electricity consumption from US cryptocurrency mining operations | US Energy Information Administration
Large data center planned near Conyers, east of Atlanta (ajc.com)

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What is the difference between a *Crypto Transaction* and *Crypto Mining*?

A transaction using cryptocurrency, like buying something with Bitcoin, is a way to virtually pay someone for a provided good or service. Sellers can provide a link or QR code that takes the buyer to a page where a person can use cryptocurrency to make a purchase—the crypto, or "money", leaves their crypto wallet and goes straight to the seller. Buying something with Bitcoin is like using Apple Pay, except your money is not connected to a bank account.

Crypto mining is the act of verifying the purchases made using Bitcoin, or other cryptocurrencies, to ensure transactions are trustworthy and correct. Verification is done by adding new "blocks" to the blockchain.

Why do people want to mine crypto coins? What's in it for them?

People want to mine crypto "blocks" because it gives them an opportunity to earn crypto coins. The faster they can solve equations in "blocks" the more they are rewarded with new coins. This is why crypto miners have "mining farms" which are facilities that house hundreds of computers and high-tech equipment whose sole purpose is solving hashes and discovering, or earning, the new crypto coins.

Why is crypto so energy intensive?

Each time crypto coins are used to pay for something, a series of energy intensive computations must be done to verify the transaction. It's a feedback cycle – as coins are used, miners verify the transaction to earn coins, then they spend the coins, which in turn requires verification, which in turn creates more coins to spend.

A single Bitcoin transaction, which includes its verification on the blockchain network by miners, requires approximately 1449 kWh, which is equivalent to about 50 days (about 1 and a half months) of power usage for the average US household.

The process of Proof of Work (PoW) is how miners unlock blocks on the blockchain to verify transactions. PoW is energy intensive to prevent attacks and hacks.

Crypto mining is energy intensive because the computers are running 24 hours a day. Crypto farms have hundreds of computers going at the same time which requires lots of power, produces lots of heat, and require lots of cooling. It is possible to use renewable energy sources for "greener mining," but crypto mining would still remain a high energy consumption process.

How can crypto become more efficient?

To reduce the energy consumption of crypto mining energy efficient mining hardware and technology should be used. Proper cooling, including liquid cooling solutions, would prevent overheating and energy loss.

Using Proof of Stake (PoS) instead of PoW could decrease the consumption of energy because PoS reduces the amount of redundant calculations, i.e. power-using computing cycles, performed.

Learn more here:

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