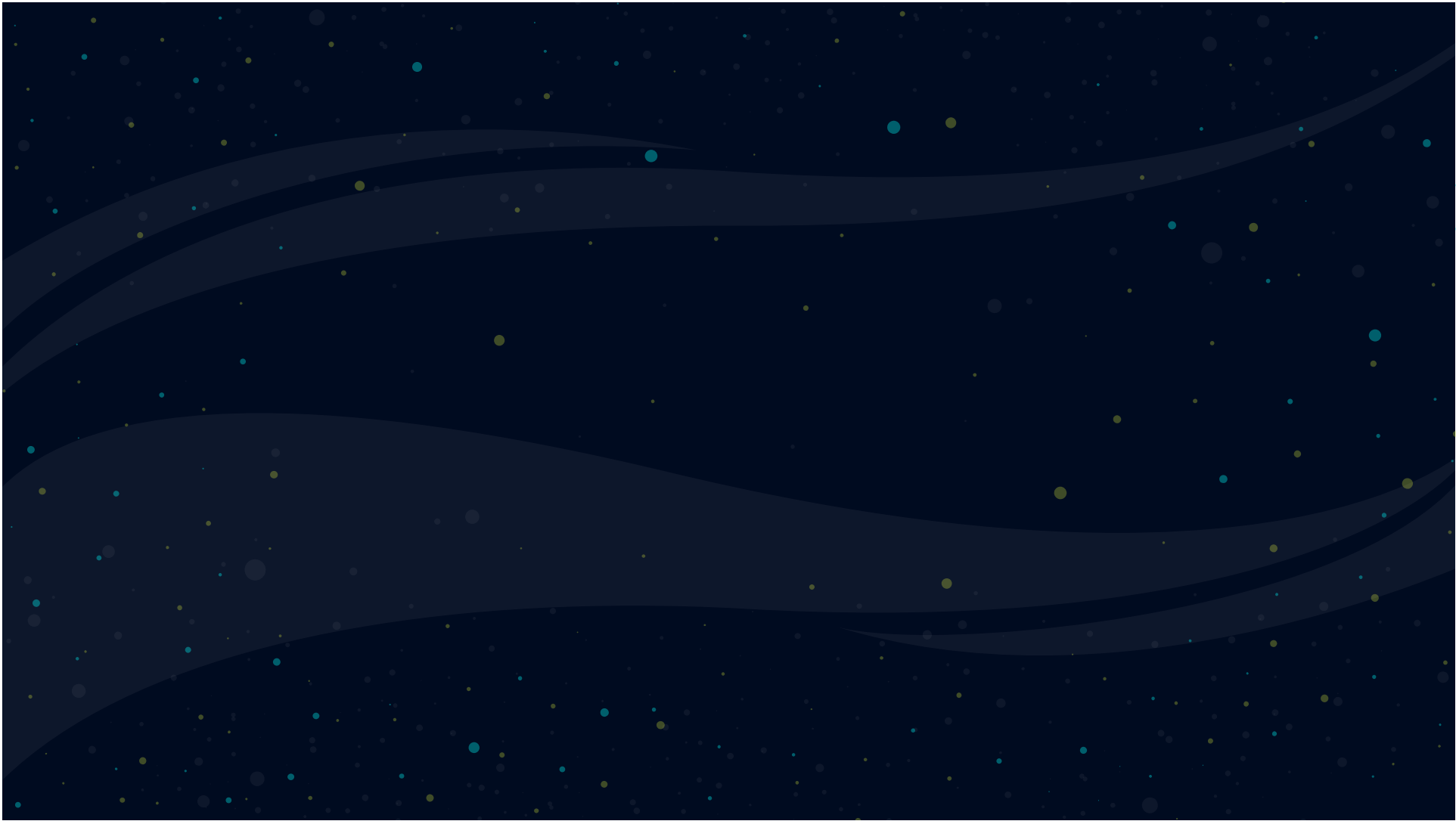




Bitcoin and Climate Change

Prabuddha Ghosh Dastidar



21

Million

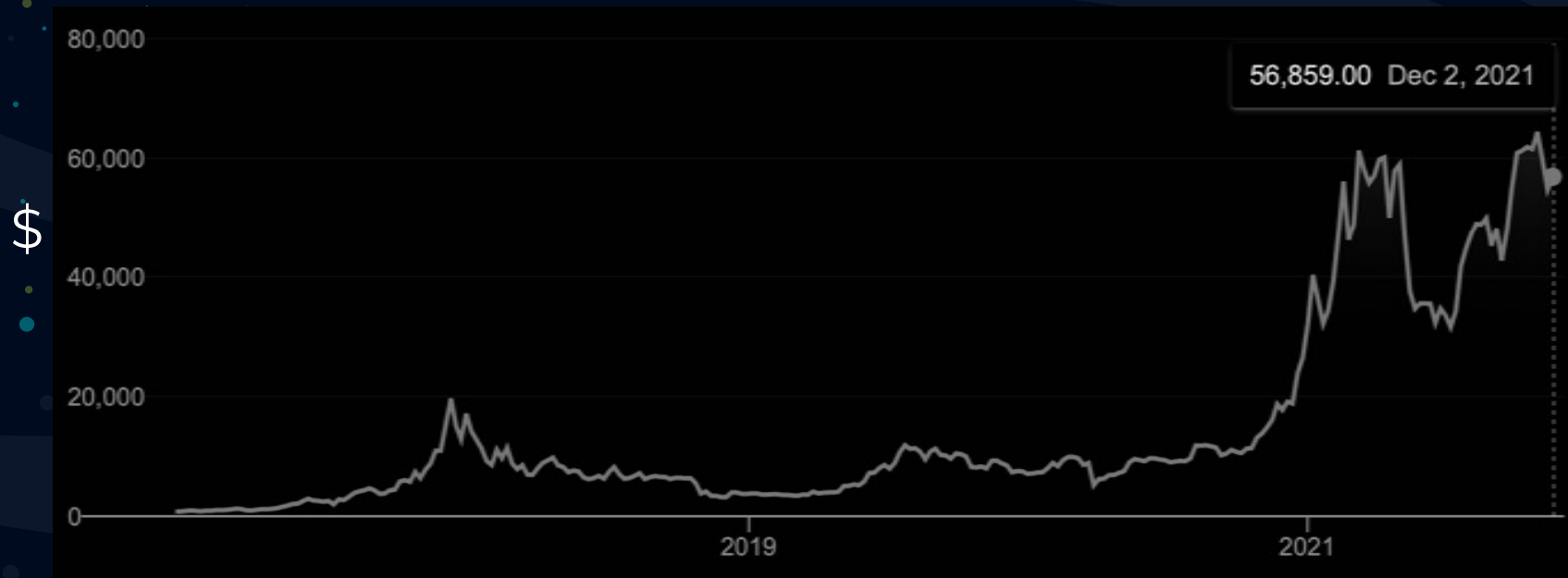
Bitcoin Supply Limit



Created by Satoshi Nakamoto
(Anonymous Person/s)

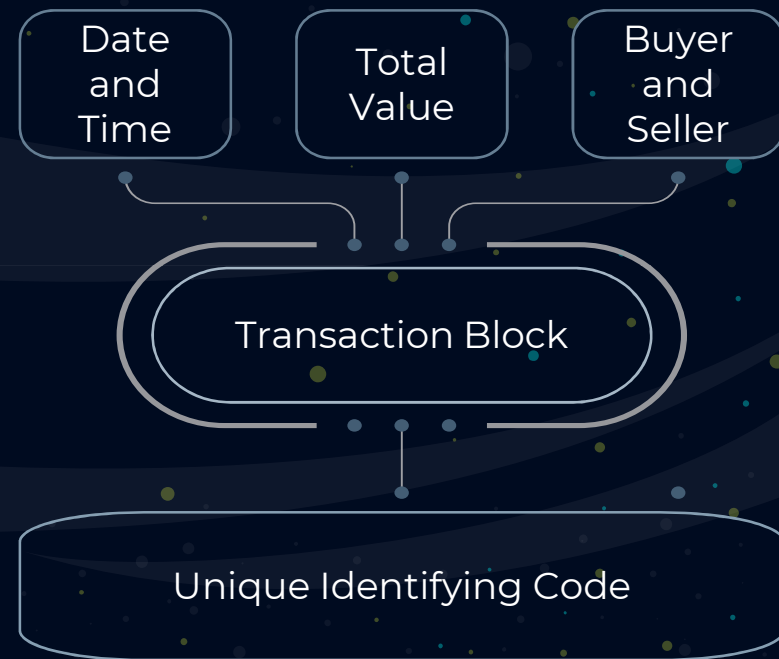
<https://bitcoin.org/en/>

BITCOIN VALUE IN USD



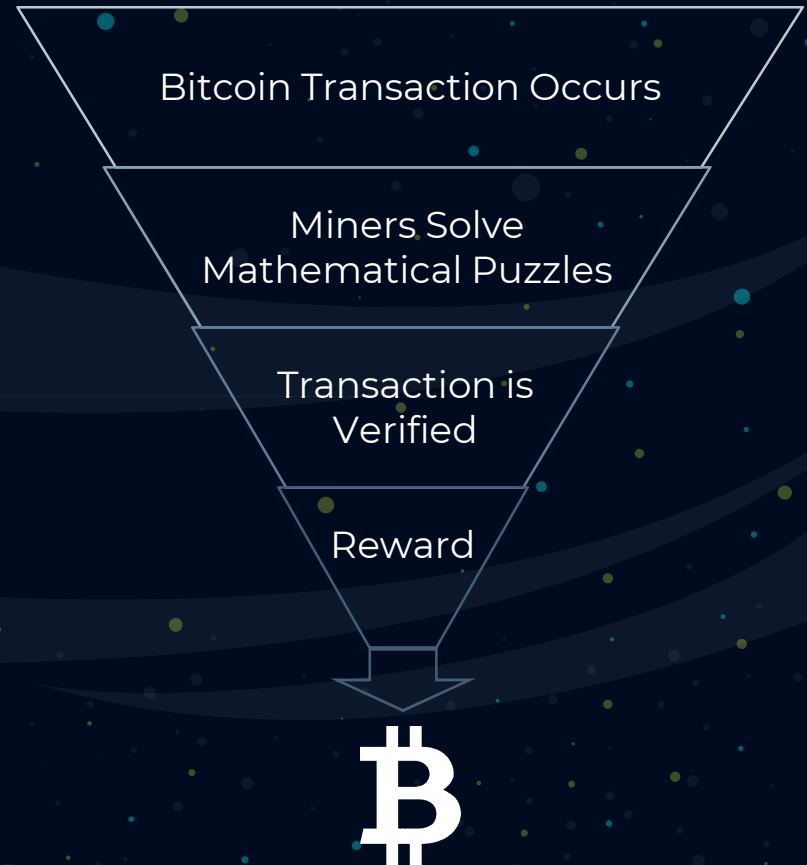
THE BLOCKCHAIN

- Distributed digital record that Bitcoin is built on
- Made up of “blocks” that contain information about every transaction
- The majority of Bitcoin holders must verify a transaction block
- The transaction recognition code must conform to the right encryption pattern
- The probability of guessing the identifying code is equal to winning the powerball 9 times in a row

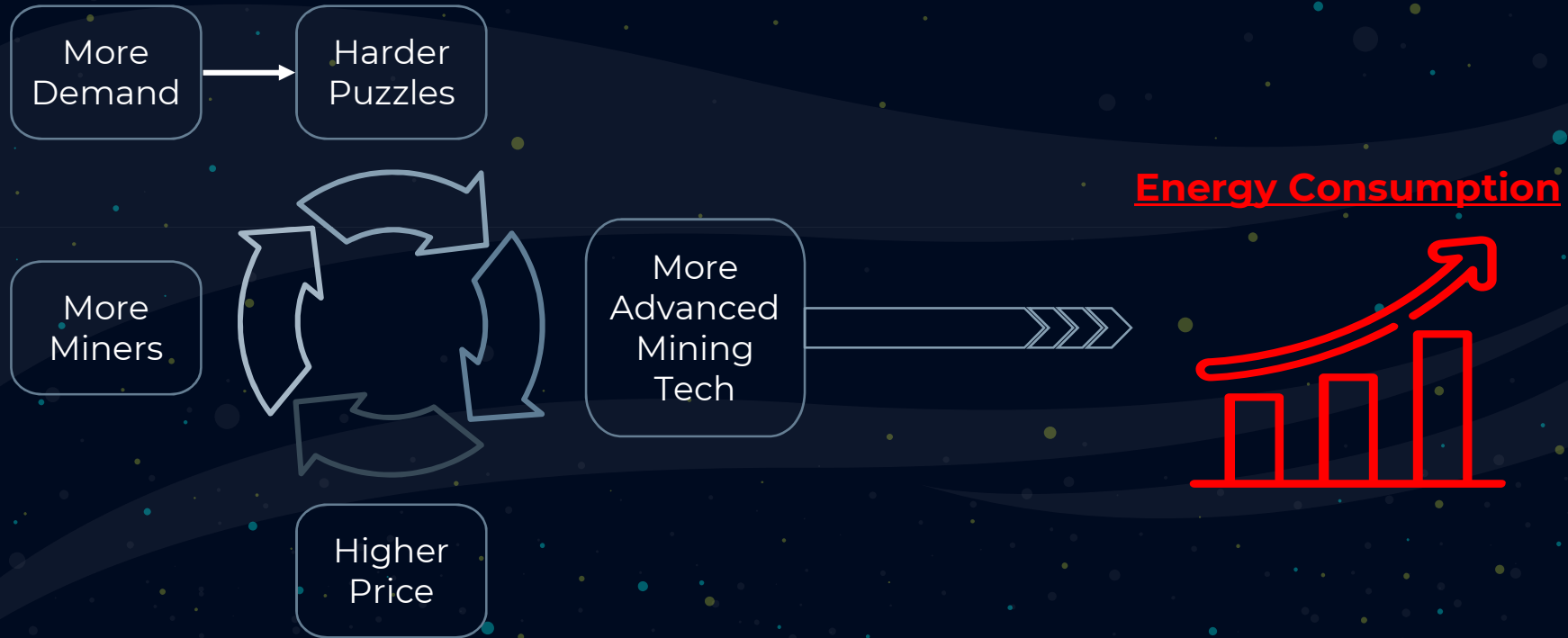


BITCOIN MINING

- Process of adding new transactions to Bitcoin blockchain
- Miners utilize computers in a race to solve mathematical puzzles in order to verify transactions
- Miners are rewarded with Bitcoin



DIFFICULT MINING PROCESS



121.36 TWh

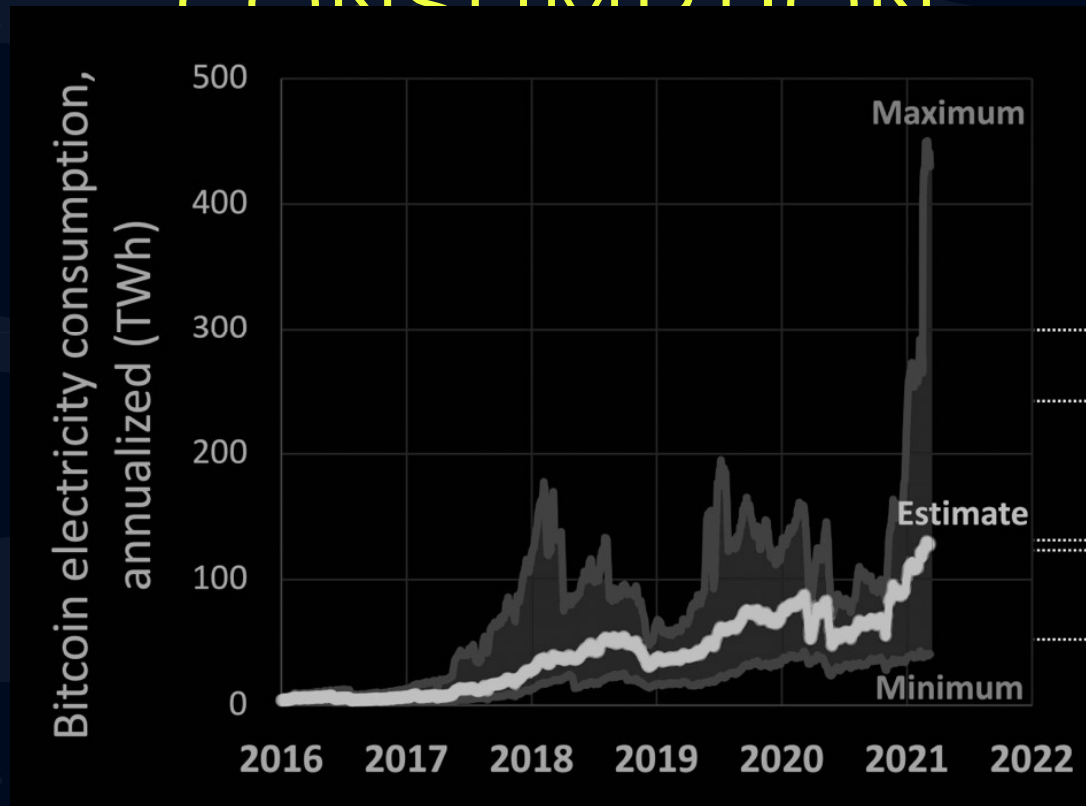
Bitcoin's 2021 Energy Consumption

BITCOIN CONSUMES

MORE ENERGY THAN...



BITCOIN ENERGY CONSUMPTION



BITCOIN'S CARBON FOOTPRINT



PUTTING BITCOIN-RELATED CO2 EMISSIONS INTO PERSPECTIVE

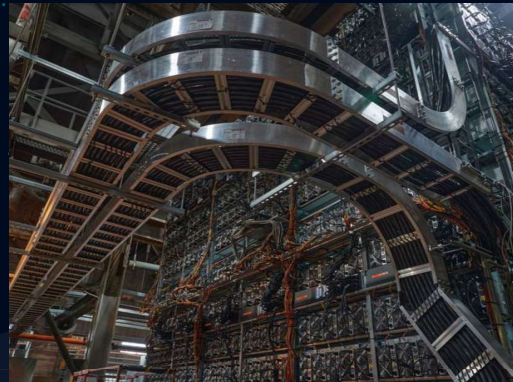
34.5 young trees needed to offset CO2 Emissions for **1 transaction**

Approx. 4 Billion young trees needed to offset CO2 Emissions for **1 year**

Driving from **NCSSM to Denver** (gas car) emits as much CO2 as **1 transaction**

The **entire NCSSM student body** driving to school (gas cars) emits as much CO2 as **55 transactions**

GREENRIDGE GENERATION PLANT



Supercomputing

A bitcoin mining plant in Seneca, NY that employs 15,300 computer servers that mined 79 bitcoins from July - September 2021.

<https://grist.org/technology/bitcoin-greenridge-seneca-lake-cryptocurrency/>



E-waste

This plant generates a lot of e-waste as ALL the hardware becomes obsolete after 1.5 years of usage.

THREAT TO AQUATIC LIFE

The Greenidge plant draws 139 million gallons of water out of Seneca Lake every day

Water body depleted

Water heated 30 to 50 degrees Fahrenheit to cool technology

Damage to aquatic ecosystems

Water body replenished

BITCOIN VS BANKING

There are 3,220
as many credit
card
transactions as
Bitcoin
transactions

Banking
industry
reported 18
times as much
CO2 emissions
as Bitcoin

<https://www.bloomberg.com/news/articles/2021-04-27/banks-produce-700-times-more-emissions-from-loans-than-offices>

<https://www.cardrates.com/advice/number-of-credit-card-transactions-per-day-year/>

Future Action

- **Local Efforts - Earthjustice sent a letter to NY government to reject renewal of Greenidge plant's permit renewal**
- **Creation of Bitcoin Mining Council for energy usage transparency**
- **Crypto Climate Accord wants to make blockchains run on 100 % renewable energy by 2025 and have the industry achieve net zero emissions by 2040**
- **Other cryptocurrencies leading the way - Ethereum is moving to different mining method where it is not a race to mine the most transactions**
 - **Each transaction is pre-assigned to a miner through a high-risk/high-reward lottery system**

<https://science.howstuffworks.com/environmental/conservation/issues/cryptocurrency-climate-change-news.htm>

<https://blog.blockonomics.co/heres-why-these-major-brands-have-stopped-accepting-bitcoin-77a9ea34acbf>

<https://news.climate.columbia.edu/2021/09/20/bitcoins-impacts-on-climate-and-the-environment/>

