Guessing game

random

6b86b273ff34fce19d6b804eff
5a3f5747ada4eaa22f1d49c0
1e52ddb7875b4b

D4735e3a265e16eee03f597
18b9b5d03019c07d8b6c51f9
0da3a666eec13ab35

4e07408562bedb8b60ce05c
1decfe3ad16b72230967de01
f640b7e4729b49fce

matching

4b227777d4dd1fc61c6f884f4
8641d02b4d121d3fd328cb08
b5531fcacdabf8a

380,529,357,561,130,800,000

Guesses per second

(CoinWarz, 2023)

How to address the energy consumption in cryptocurrency mining

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Outline

Problem: The energy consumption in cryptocurrency mining

- Explanation
- Causes
- Impact

Solutions

- Mining ban
- Proof-of-stake (PoS)

Explanation

What is cryptocurrency?

- Digital currency secured by cryptography

What is mining?

- Use advanced computer to calculate math puzzles and cost energy
- Used to verify transactions and avoid hacking

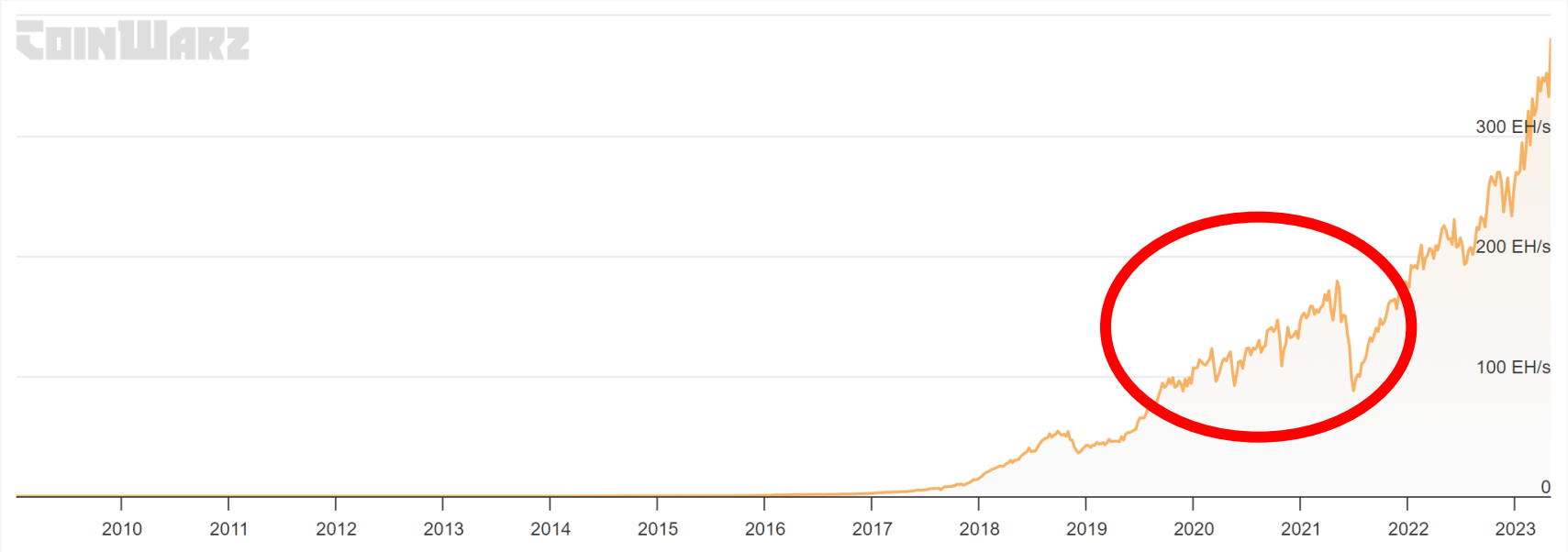
(Judmayer, 2022)

Problem: Causes

- Rapid price increases in cryptocurrency from 2019 caused mining fever
  - Energy consumption increased
  - Caused more climate damages

(CoinWarz, 2023)

Problem: Causes



Global Bitcoin hashrate (mining power)

(CoinWarz, 2023)

Problem: Impact

- Consumes 120 - 240 billion kWh per year
- Emitted about 140 million tons of CO_2 per year

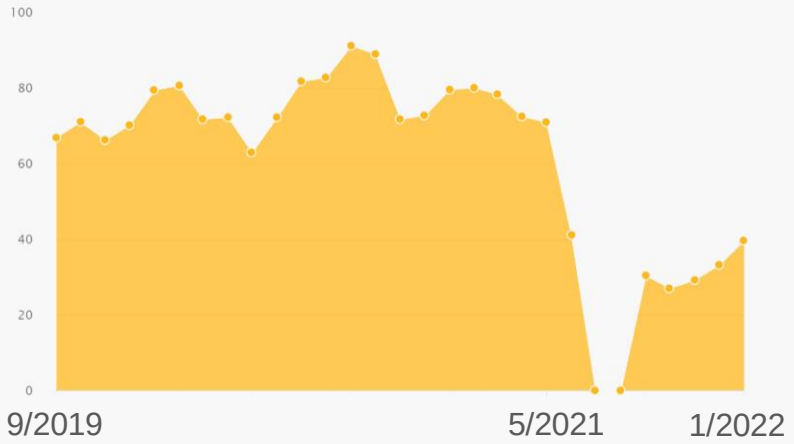
(WH, 2022)

- Each Bitcoin exhausts about 113 tons of CO_2.

(Jones,2022)

Solution1: Mining ban

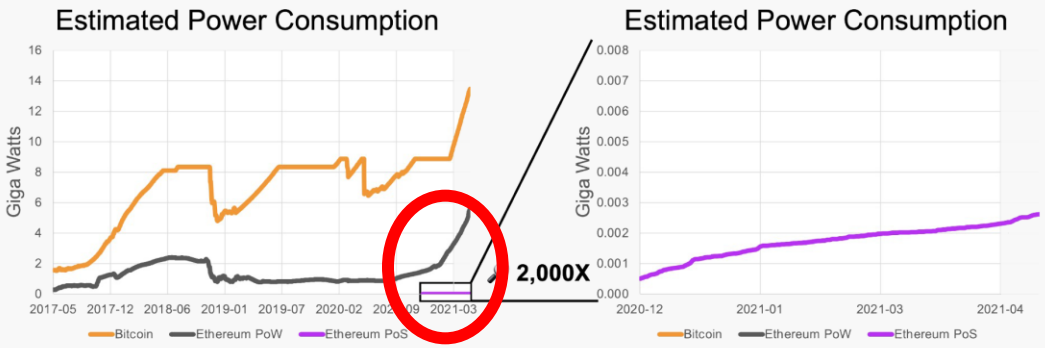
- Restrict device functionality or use laws to ban mining
- **Evaluation:**
  - + Immediate impact
    - E.g. Nvidia limits mining
      - China bans mining
  - - Can easily be circumvented



Network hashrate (mining power) in China
(CCAF, 2022)

Solution2: Proof-of-stake (PoS)

- Another method to verify transactions and earn currency
- Replace mining
- **Evaluation:**



  + Save energy

    99.95% less energy than Proof-of-Work (mining).

  + Successful transition of Ethereum

  - Favouring those with more currency

    More currencies for richer people

(FTSE Russel, 2022)

Conclusion

- **Problem: How to address the energy consumption in cryptocurrency mining**

- **Solution:**
  - Mining ban
  - Proof-of-stake (PoS) method

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