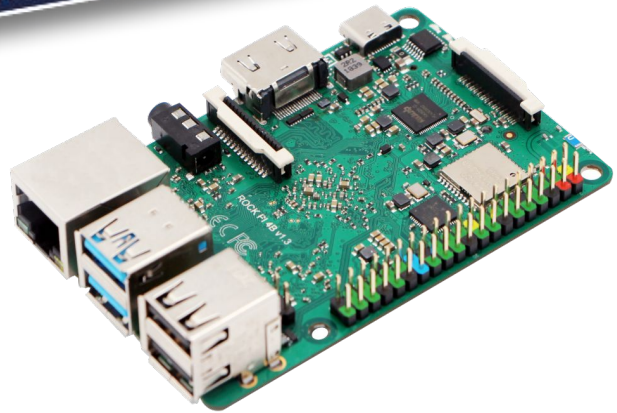

Cardano on the Rocks
Project Reynisdrangar

Single Board Computers (SBC)

- Small
- Cheap

- Most known: Raspberry PI
- More powerful: Rock PI & RockPro64



- 6 CPU Cores, 4 GB RAM, Solid State Disk
- 5 Watt power consumption

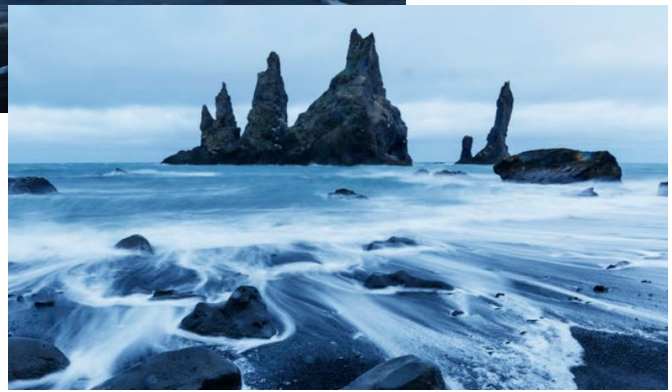
Project Reynisdrangar?

Jörmungandr

- The new IOHK Rust Node
- Also the Norse Ouroboros

Reynisdrangar

- Mystical rocks in Southern Iceland
- Project name for Cardano On The Rocks



Proof Of Work Mining

Avg. Bitcoin Miner Uses:
700 - 1500 watts

* 5 million Miners

= 7,300,000,000 watts
of election computation

To: Elect The Block Producer

Not: Run The Entire Network

Source:
https://www.ofnumbers.com/2018/08/26/how-much-electricity-is-consumed-by-bitcoin-bitcoin-cash-ethereum-litecoin-and-monero/

5 Watts Gets Us What?

Participation In Proof Of Stake

- Keep Up To Date With Chain
- Serve Client Requests
- Produce Blocks
- Verify Other Blocks
- Share The Blockchain

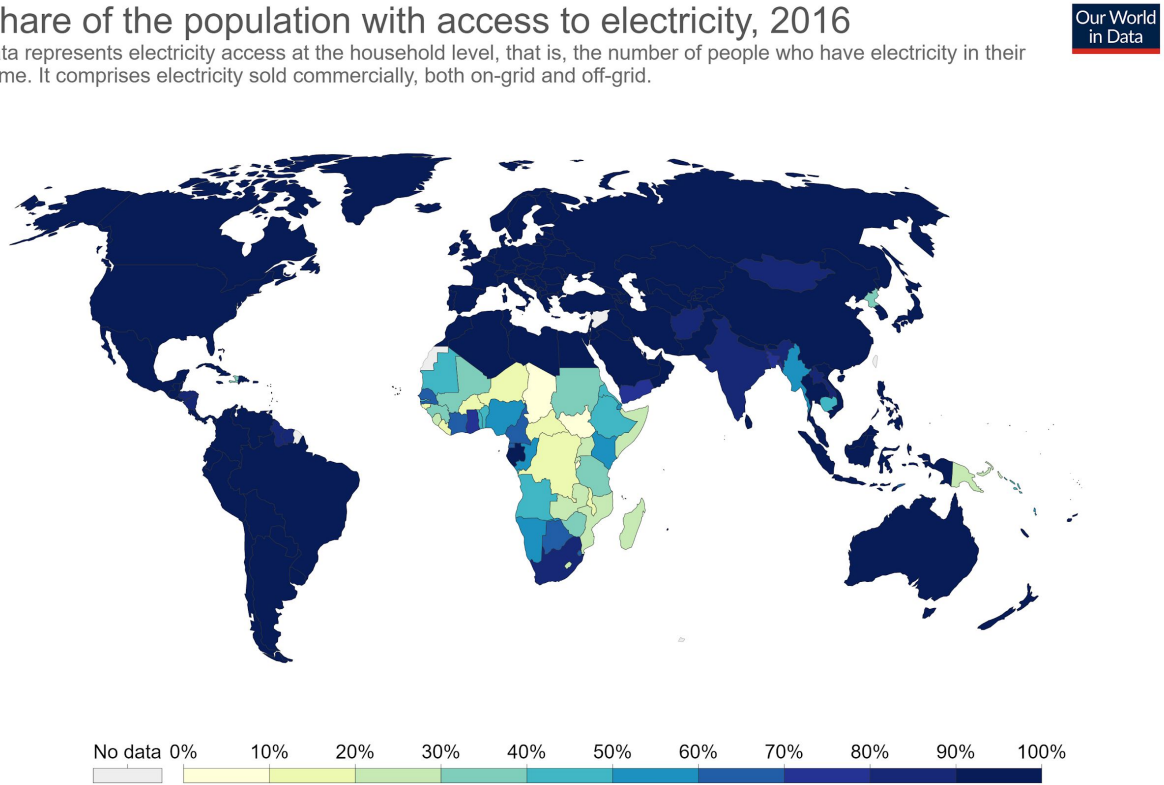
It becomes easily noticeable how much more efficient PoS is compared to PoW.

Presenting The Rock Pis

Energy efficient

Solar Power Demo

- Solar Panel
- Buffer Battery
- Power Meter
- RockPro64
- WiFi Uplink

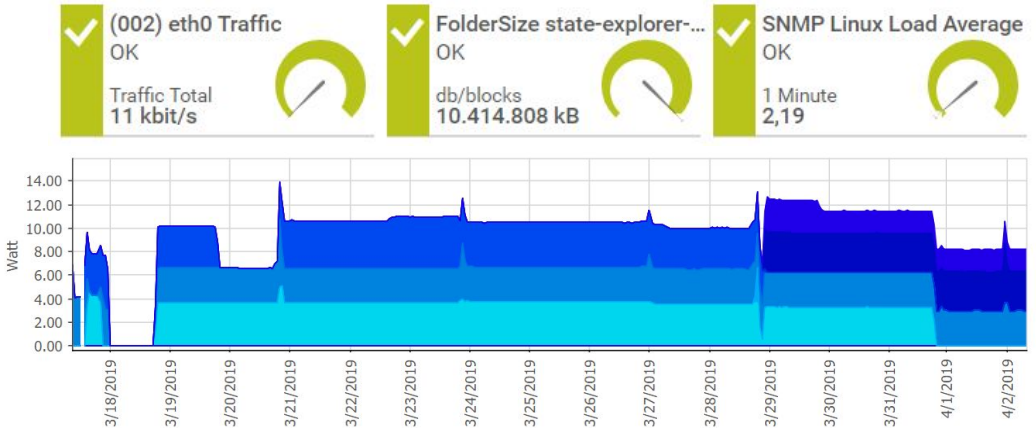


Source
https://ourworldindata.org/energy-production-and-changing-energy-sources

Live Data

We measure:

- CPU
- RAM
- DiskIO
- NetIO
- Storage Size
- Power consumption

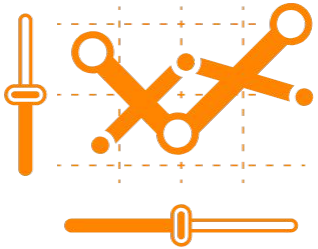


What is the best PoS node?

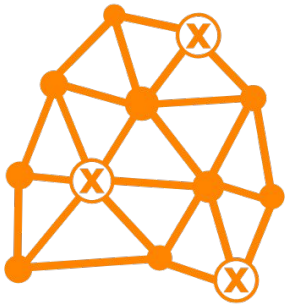
Will Cardano rely only on tiny RockPi's ?

No, it will rely on the 3 D's...

Dynamic Availability



Decentralization



Diversity

Enterprise Class Supernodes

- Xeon CPU’s
- Error correcting RAM
- Solid-state RAID Storage
- 10 GBit/s Network Interfaces
- Redundant Power Supplies
- 140 watts

Bare Metal Vs. Virtual Instances

- Virtual Instances provide an easy set-up process for new operators
- However they create a large centralizing effect on the network
- With physical hardware you aid in improving the physical distribution of the network as a whole
- Thus having a variety of configurations of nodes creates a stronger network

Zymkey

- Key Generation & Storage
- Encrypting & Signing Data
- True RNG
- Tamper Resistant

zymbit

Conclusion

- Rock Pi's are an example of an effective low powered node
- Variety in node configurations allows for flexibility and strengthens the network
- Guides on setting up your own Rock Pi stake pool will be released in the proceeding weeks