

Focus —

Crypto-currencies: will the energy-gulping tech ever be green?

According to an index provided by Cambridge University's Centre for Alternatives Finance, Bitcoin mining requires twice the electricity consumed in Switzerland in 2020, or 129 TWh (source : Enerdata). Ethereum, for example, uses about 31 TWh per year.



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Blockchain-based innovations have been scrutinized for their sky-rocketing gas emissions, but there is more to it. Can they actually be part of the solution, rather than a new problem?

The emerging technologies that have made cryptocurrencies possible have been the focus of much attention for the past year. As equity markets traded at their historical highs and as concerns about future returns were increasing, many investors found an alternative in cryptos.

A new generation of retail investors, caught between rising inflation and negative interest rates that discouraged long term deposits, enjoyed surfing this wave. Crypto currencies quickly became the new holy grail, the ultimate chance for anyone to turbo-charge their financial life. But investing in cryptos is not for the faint hearted. As usual, when a new technology or a disruptive product is created, critics and counter arguments flourish.

That being said, targeting crypto currencies such as Bitcoin for their huge energy consumption was no bad thing. In a year dominated by rising temperatures and climate events, along with mounting regulations and an almost unanimous commitment to net zero, how can we tolerate more fossil fuels consumption for the sake of providing a quick financial return? Bitcoin relies on a 'Proof of Work' system (complex cyphers that need to be solved by computers to verify new transactions. It requires a huge amount of processing power), thus involving huge amounts of energy to produce a single token. Other cryptocurrencies using a 'Proof of Stake' system use far less energy, as do currencies using a technology called block lattice, a structure where every user gets their own chain, and which doesn't require mining at all. In a proof of stake system, staking serves a similar function to proof of work's mining, in that it's the process by which a network participant gets selected to add the latest batch of transactions (block) to the blockchain and earns coins in exchange. Not all crypto currencies deserve the same criticism.

Crypto currencies, even if not yet fully democratized, and irrespective of their market values are considering their energy footprint seriously, favouring renewables when possible. An acceleration of sustainable solutions can be expected to fill the gap between the current demand and the supply for greener blockchain-based solutions. The Proof-of-Stake based cryptos such as Cardano use very little energy. One transaction utilizes about 0.5 kWh, or Solana for which one transaction uses as much energy as two Google searches. Other NFTs (Non Fungible Tokens) propose to offset your carbon footprint and own stakes in solar farms. Not only can cryptocurrencies become less energy-hungry, but blockchain applications actually have the potential to accelerate the world's painful march towards SDGs (Sustainable Development Goal) by bringing together the right stakeholders, and create greater transparency and accountability.

Amongst the myriad of proposals, some cryptos now have a responsible project attached, often linked to Sustainable Development Goals, even if they aren't making a lot of noise about it. For instance, Celo is a blockchain that aims to tackle one of the key user experience problems with cryptocurrency: confusing public keys. Celo swaps public keys – long scrambled strings of pseudo-random characters used to identify cryptocurrency accounts – with a mobile phone number. That makes sending and receiving cryptocurrency much easier and more accessible for newcomers to the market. Celo aims at balancing its objectives for a more inclusive financial system by accelerating the path toward providing anyone with a mobile phone access to the same financial tools and services used by the top 1%, including credit and stable, low-risk yield. This is just one example among many others. It is certain that countries with fragile economies cannot ignore the opportunity crypto currencies represent, because it has the potential to provide much higher rates of access to financial services that accelerate growth (such as loans and microfinancing).

From a sustainable aspect, Bitcoin consumes a lot of energy, so does shipping, transportation and industrials, to only name a few. A recent report from Galaxy Digital found that the banking industry consumes 263.72 terawatt hours (Twh) per year, almost twice the Bitcoin. There are good reasons to hope that energy intensive cryptocurrencies will increasingly switch to cleaner technologies.

To conclude, yes, cryptocurrencies are disruptive and as with many technological revolutions that have come before, none were perfect from day one. Cryptocurrencies have the potential to support many of the SDGs and offer plenty of opportunities, including climate related projects.

For further information

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