# Bitcoin's Electricity Consumption - Carbon Footprint

## What is the issue?

- Investors around the world are rushing to follow the newest financial trend of Bitcoin which is currently worth around $1 trillion.
- But the carbon footprint that the cryptocurrency is leaving behind has raised concerns.

## How do Bitcoins work?

- Bitcoins are created by "mining" coins.
- For this purpose, high-tech computers are used for long hours to do complex calculations.
- The more coins there are in the market, the longer it takes to "mine" a new one.
- As mining provides a solid source of revenue, people are willing to run power-hungry machines for hours to get a piece.
- In the process, more electricity is consumed.

## What is the level of electricity consumption?

- Bitcoin uses more electricity per transaction than any other method known to mankind.
- In 2017, the Bitcoin network consumed 30 terawatt hours (TWh) of electricity a year.
- However, the network currently uses more than twice as much energy: between 78TWh and 101TWh.
- **Carbon footprint**- Each bitcoin transaction roughly requires an average 300kg of carbon dioxide.
- This is equivalent to the carbon footprint produced by 750,000 credit cards swiped.
- A recent study has shown that Bitcoins leave behind a carbon footprint of 38.10 Mt a year.
- The annual carbon footprint of Bitcoins is thus almost equivalent to that of

Mumbai.
- To put it in a global perspective, it is as high as the carbon footprint of Slovakia.
- Roughly 60% of the costs of bitcoin mining is the price of the electricity used.

## What are the other impacts of Bitcoin mining?

- With miners using high-tech computers for hours to formulate new blockchains, these machines do not last long.
- Manufacturers of Bitcoin mining devices need a substantial number of chips to produce these machines.
- Recently, during the Covid-19 crisis, the world had witnessed a shortage of these chips.
- This shortage, now, in turn started affecting the production of electric vehicles around the world.
- To produce 1 million such computers, the largest provider, Bitmain, would have to use a month's capacity of one of only two chip fabricators in the world capable of producing such high-power silicon.
- This potentially crowds out demand from other sectors such as Artificial Intelligence, transportation and home electronics.
- Besides this, countries like Iran are using cryptocurrency to circumvent economic sanctions (imposed to prevent developing nuclear capabilities).
- Cheap energy has lured in many cryptocurrency miners.
- The mining activity in Iran now represents 8% of the total computational power in Bitcoin's network.
- The country is thus using Bitcoin to boost revenues while its oil exports suffer from international sanctions.
- The effects of cryptocurrency mining thus often spill over to other parts of the economy too.

## What can possibly be done to control the carbon footprint?

- The major problem with mining Bitcoin is not its massive energy-consumption nature.
- It is rather the fact that most of the mining facilities are located in regions that rely heavily on coal-based power.
- Given the growing implications of the cryptocurrency mining industry, policymakers should follow the path shown by Québec in Canada.
- There, a moratorium on new mining operations has been imposed.
- Although Bitcoin might be a decentralised currency, many aspects of the ecosystem surrounding it are not.
- So, large-scale miners can easily be targeted with higher electricity rates, moratoria, or, in the most extreme case, confiscation of the equipment used.

- Governments can also ban cryptocurrencies from digital asset marketplaces as it will affect the prices of a digital currency.

## What is the case with India?

- The country, at present, has around 75 lakh cryptocurrency investors.
- They have together pooled in over Rs 10,000 crore into Bitcoins and other such digital currencies.
- The prices have surged by over 900%, given the worldwide boom.
- A single bitcoin that used to cost around Rs 4 lakh in 2020 now costs somewhere around Rs 41 lakh.
- However, reportedly, the government seems to plan to pass the pending cryptocurrency Bill that puts a complete ban on and criminalises possession of Bitcoins.
- Finance minister has however said that the Centre will take a “calibrated approach” and leave a window open for experiments with blockchain technology.

**Source: The Indian Express**