

How Virtual World is Making Real World Sustainable

The path toward sustainability has been suggested, advocated, and discussed for decades. But Metaverse, an immersive virtual world, was not a part of it in any way. When one hears the term 'sustainability', by default, it brings up images of recycling, plastic ban, and thrifting, and certainly not technology. Metaverse, as a concept and practicality, has pushed for an unknown feature it harbours- to make companies and their users adopt sustainability in some aspects of life. **BY PAROMITA GUPTA**

Global brands such as Louis Vuitton, Walmart, Adidas, PUMA, Balenciaga, and Nike have entered the digital realm to offer their products and services to their consumers and create an exclusive community while pushing for sustainability. Recently, Aditya Birla Capital unveiled OneVerse, a virtual Metaverse lounge, to offer users PIFA details and information. "ABC One Verse offers a virtual replica of the physical branches where customers can create their digital avatar by taking a selfie and entering the virtual lounge to interact with an agent or navigate through the various product and service experiences available on the virtual lounge," shares Ramesh Narayanaswamy, CTO, Aditya Birla Capital Limited.

SIGNIFICANT ENVIRONMENTAL BENEFITS: Metaverse offers significant environmental benefits, but the most integral one is a reduction in carbon emissions. A recent Cornell University research showed that it has the potential to reduce global surface temperature by .02 degrees by the end of this century and lower greenhouse gas emissions by ten gigatons in the US alone by 2050. Technologies such as virtual reality, augmented reality, mixed reality, blockchain,

and non-fungible tokens play a role in developing the Metaverse and making it sustainable.

Virtual products and shopping eliminate excessive production, limit wastage, and save on double cost. "Phygital" refers to the use of technology to blend the digital world with the real physical world, and brands have tapped into this for a more sustainable system. Brands have actively and successfully tapped into offering phygital experiences to their users. A case in point, Louis Vuitton launched its NFT collection, Treasure Trunks, which had each NFT owner provided with a custom physical trunk and exclusive benefits. Brands can manufacture only the number of textile garments that are in demand instead of mass production, only to see them go unsold and, later, burnt. Each year, about 92 million tons of clothing find their way to landfills, which can be prevented through virtual worlds. This will work towards improving the conditions of sweatshops in countries.

Users of Metaverse are keen on building a digital world for their twin avatars and giving them the life they wish for. This includes purchasing and selling outfits, accessories, and skins. It is reported that digital wearables result in 97 per cent less greenhouse gas emission and save about 3000 litres of water. Virtual shopping eliminates the need for physical stores and infrastructure. It also saves on the associated resources such as electricity, heating, cooling, and lighting. Air travel accounted for over two percent of global emissions in 2022. Virtual meetings have had an impact on air travel. However, the extent is yet to be determined. Prior to 2020, no one expected that we would adopt virtual modes, so the fact that in coming years, Metaverse meetings and gatherings might be the norm cannot be ruled out. "Physical events have certain drawbacks, including environmental impact, limited reach, cost constraints, safety risks, lack of flexibility, limited interactivity, and time/resource intensiveness, while offering sustainable products and services within the Metaverse contributes to a greener economy," shares Piyush Gupta, CEO, VOSMOS.

Metaverse gatherings can also pave the way for virtual education, which can see students from one part of the world study in foreign universities and gain classroom experiences without leaving their homes. With the development of virtual education systems, students will have access to immersive learning experiences, personalized learning, and global collaboration. This will reduce the carbon emissions caused by flights. Virtual tourism can help curb the ecological impact and reduce carbon footprints pertaining to tourism. It can also be a great way for people to experience inaccessible places. Users can

99.95%

Ethereum will use at least 99.95% less energy post-shift from Proof-of-work to Proof-of-stake

Source: Ethereum Foundation

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WAYS METAVERSE WILL MAKE REAL WORLD SUSTAINABLE

- Virtual tourism
- Phygital products
- Metaverse meetings
- Digital infrastructure planning
- Virtual stores



take tours of museums, cities, and landmarks, and it might even be possible in real-time soon. Metaverse tourism will also pave the way to experience immersive cultures and lifestyles from around the world. When it comes to conceptualization and construction of infrastructure, it is possible to create virtual buildings and towns with low environmental impact before it's built in the real world.

THE OTHER SIDE: While metaverse offers significant environment benefits, a section of industry believe otherwise. Blockchain technology, particularly Ethereum, is regarded to be the highest emitter of carbon. A sole ETH transaction consumes an average of 60 percent more energy than 100,000 credit card transactions, while a Bitcoin transaction consumes 14 times the energy. NFT mining, i.e., creating an NFT, isn't environment friendly. "Metaverse holds the promise of carbon reduction, but the energy-intensive nature of computations has raised concerns about its ability to support sustainability", shares Priyanka Kulkarni, As-



Overall, Metaverse empowers companies to drive sustainability by adopting green technology, promoting digital literacy, and leveraging blockchain and NFTs for secure and transparent transactions."

Piyush Gupta, CEO, VOSMOS

sistant Manager Growth Advisory, Aranca.

But things are changing. ETH, in 2022, officially switched from Proof-of-work mechanism to Proof-of-stake, making the platform and all transactions greener. The Ethereum Foundation claims that the switch has drastically reduced Ethereum's energy consumption by 99.95 percent. 5ire, an Indian fifth-generation blockchain ecosystem, is also practicing and advocating for the same. "Carbon offset program is a reactive measure to sustainability, like you've already committed a sin and then you are nullifying it," shares Pratik Gauri, founder and CEO, 5ire.

WHAT MORE CAN BE DONE?

While proof of stake is being adopted, it's not enough to satiate the large amount of energy needed for Metaverse. However, it is possible to reduce the ecological impact by harnessing renewable energy such as solar, wind, or hydro. Gauri also thinks that Web3 is the only way India can achieve Sustainable Development Goals of the United Nations by 2030. **E**