Tesla’s $1.5 billion bitcoin purchase clashes with its environmental aspirations

Tesla just gave bitcoin a big boost that’s likely to result in more greenhouse gas emissions from the energy-hungry cryptocurrency. After Tesla purchased $1.5 billion in bitcoin and announced that it will accept bitcoin as payment in the future, the price of bitcoin reached an all-time high.

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“It’s hard to imagine, frankly a more credible endorsement than one coming from folks like Elon [Musk] who are inventing the future,” says Garrick Hileman, head of research at crypto asset company blockchain.com and visiting fellow at the London School of Economics.

When prices are high, bitcoin “mining” – creating new coins by verifying transactions – ramps up. But even though that mining happens virtually, it results in greenhouse gas emissions that fuel a climate crisis in the real world. That’s at odds with Tesla’s mission to “accelerate the world’s transition to sustainable energy.” With its embrace of bitcoin, it’s accelerating the rise of a cryptocurrency that gobbles up energy pretty unsustainably, or at least inefficiently, *by design.*

Bitcoin was created to eliminate the need for a third party, like a bank, to oversee financial transactions. But without a bank’s security systems, bitcoin records are kept safe and accurate by requiring miners to solve ultra-complex numeric problems. Miners need energy-hungry machines to solve those problems, which is what drives the climate pollution

associated with bitcoin. It’s a system called “proof of work” that’s deliberately difficult in order to dissuade people from trying to take over or corrupt the records. It also gets expensive to mine bitcoin because of the cost of the machines and all of the energy they guzzle.

“It should be more profitable to play by the rules than to cheat, that’s really the entire idea behind all of this,” says Michel Rauchs, a research affiliate at the Cambridge Centre for Alternative Finance. “And the only way you can do that in a trustful way online is by burning electricity through those computing puzzles.”

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If bitcoin were a country, its annual electricity consumption would rank 30th in the world. It would use just under the amount of energy Norway consumes and slightly more than Argentina, according to the Cambridge Centre for Alternative Finance, which keeps an updated estimate of bitcoin’s energy consumption. Bitcoin’s energy consumption has risen steadily since October as the price of bitcoin spiked. That bubble could burst, but Tesla’s bid on bitcoin has given the price of bitcoin – and its carbon dioxide emissions – an added lift.

“I think it is concerning considering that there doesn’t seem to be an instrument to reduce the impact, other than the price,” says Susanne Köhler, a PhD fellow at Denmark’s Aalborg University who published a 2019 paper on bitcoin’s environmental impact. The machines that mine bitcoin have become more efficient over time, but that hasn’t solved bitcoin’s energy problem. Because bitcoin was built on the premise of inefficiency, its puzzles are getting harder as devices get better at solving them.

“This is something that as long as that ‘proof of work’ mechanism isn’t changed, that situation won’t also change in the future,” says Rauchs. “The higher the bitcoin price

becomes, the more profitable it is to mine. So, the more miners will want to participate in that competition and the more electricity, as total, will be burned — no matter how energy efficient the underlying equipment is."

Other cryptocurrencies have begun to move away from using "proof of work" as a sort of security system, Köhler points out. Emerging alternatives don't drain as much energy. A model called "proof of stake," for example, doesn't require so many complex puzzles to validate transactions. Climate-conscious consumers might want to keep those kinds of differences in mind, whether they're interested in cryptocurrencies or electric vehicles.

Shoppers worried about climate change might want to consider electric vehicles from other automakers, says John Quiggin, an economics professor at the University of Queensland who called Tesla's decision "environmental vandalism" in an email. "If you're concerned about the energy transition maybe you should be looking at General Motors, who might be late to the party, but at least you can't imagine that they're going to go off into bitcoin," Quiggin said in an interview.

Tesla's bitcoin purchase would technically inflate its carbon footprint

Tesla's $1.5 billion purchase of bitcoin would technically inflate Tesla's carbon footprint as a company. If considered an investment, it would be part of the company's "indirect" emissions. Indirect emissions also include pollution along the supply chain and from the use of its products. These indirect emissions already make up a majority of Tesla's carbon footprint, as it does for many companies, according to its 2018 sustainability report. It did not release figures for its indirect emissions as a company, however, in its 2019 report.

Figuring out the entire carbon footprint of bitcoin is even trickier. Miners are often on the move, chasing cheap electricity wherever they can get it. The source of that

electricity can be hard to trace. Most bitcoin is mined in China, where it might be fueled by either dirty coal or renewable hydropower that’s abundant during the country’s wet season.

Bitcoin’s future carbon footprint is similarly hard to parse. New rules and policies — like setting deadlines to ramp up clean energy or placing a carbon tax on bitcoin mining — could eventually minimize bitcoin’s toll on the climate. But without a coordinated global effort to tackle climate change, miners could move around to evade regulations on bitcoin and its energy use.

Thankfully, the most dire predictions of a bitcoin-driven energy apocalypse haven’t come to fruition. A 2017 study predicted that bitcoin mining would eat up all of the world’s energy by 2020. While 2020 had a lot of problems, that wasn’t one of them.

https://www.theverge.com/2021/2/9/22275243/teslas-bitcoin-purchase-clashes-climate-change-mission