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# Crypto's Dark Secret

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Contest



Illuminated mining rigs operate inside racks at the CryptoUniverse cryptocurrency mining farm in Nadvoitsy, Russia. Credit: Andrey Rudakov via Getty Images

## By Tyler Swanson

Bitcoin has been called “The People’s Currency” and “The Currency of the Future,” but whatever the name, its rise to prominence in recent years is astonishing. While Bitcoin was initially intended to act as a decentralized currency that anyone could generate and trade for secure transactions, it has become a tool for investors on the stock market to try and get rich quick with occasional disastrous consequences. Worth over \$40,000 per coin at the time of writing, Bitcoin has captured the fascination of tech enthusiasts, financiers, and the public alike. For some, the widespread rush to invest in Bitcoin

may seem reminiscent of the gold rush of 1849, and that notion isn't too far off. Many people have used their savings, and some have even mortgaged their homes, to invest in the cryptocurrency. This high level of risk sometimes pays off, but sometimes doesn't, and families are left destitute as the value of Bitcoin rises and falls almost at a whim.

But the relative successes or failures of investors distracts from a much darker shadow: the environmental impact of Bitcoin. The technology of "mining," as the process is called, is so energy intensive that global mining operations consume as much energy as some nations; unfortunately, the majority of this energy is generated from fossil fuels. As demand for Bitcoin grows, more companies emerge to mine for this digital gold, resulting in the resurrection of long-dormant power plants, creating revenants from the fossil-fueled past America is trying to leave behind for a clean energy future. Nowhere is this more evident than in Dresden, N.Y., where Bitcoin has revived a once-dead power plant, with destructive impacts on local ecosystems in addition to a new spike in carbon emissions.

The village of Dresden is on the banks of Seneca Lake in Yates County, N.Y., and is home to just over 300 people. Situated in the heart of the Finger Lakes region, Dresden and the surrounding community are home to a burgeoning tourism industry centered on wineries. With the beautiful lake, lush vineyards, and rural atmosphere, the region was developing into a getaway destination for foodies and nature lovers alike until a private equity firm called Atlas Holdings bought an abandoned power station.

The Greenidge Generation Plant, located right on the banks of Seneca Lake, operated as a coal-burning power plant until high operating costs put it out of business in 2011. Closing the plant might be held up as a victory in the transition from fossil fuels, with coal proved economically unviable. However, in 2014, [Atlas Holdings](#)

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In this aerial photo of Greenidge Generation's power plant outside Dresden, N.Y., Seneca Lake is visible in the background. Credit: Greenidge Generation LLC

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ant to supply electricity to the grid after converting the fuel source to natural gas. Thanks to a significant economic development grant resulting from the firm's lobbying efforts, the fuel transition was complete, with only one slight problem: low demand for energy.

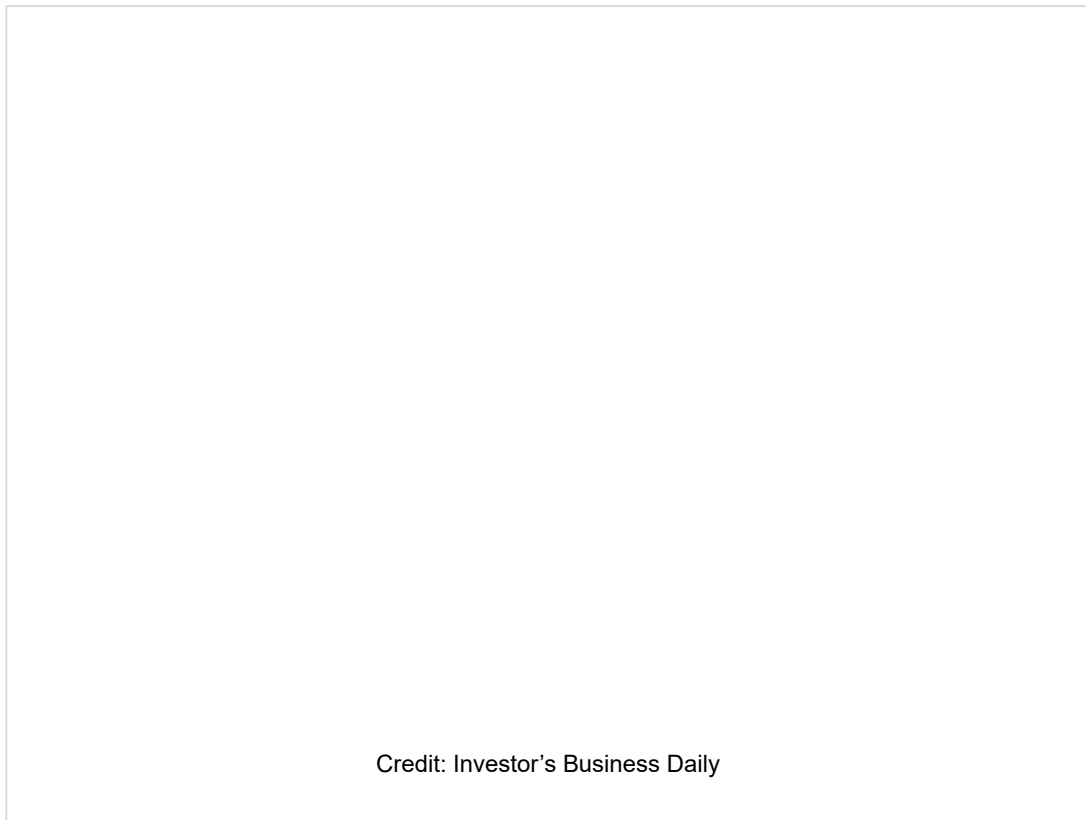
In an interview with Peter Mantius, a journalist who has been covering Greenidge's crypto story as it unfolds, he explained that the energy grid had adapted after the initial plant closing, and once it reopened, the grid only occasionally needed the plant's power during peak hours. In 2019, the Greenidge Plant was only operating at 6% capacity. After such a large investment in purchasing the plant, lobbying efforts, and overhead costs, Atlas seemed to be on the verge of losing its money. With this significant investment on the line, the plant's operators turned to a new financial stream: Commercial Bitcoin mining.

To appreciate the value of this new direction taken by Greenidge Generation Holdings, the subsidiary of Atlas Holdings that runs the plant, requires an understanding of the process of Bitcoin "mining." As a digital currency, there is no physical manufacturing or minting of Bitcoins; instead, mining takes place through a computer solving a



complex cryptographic puzzle. Once decoded, the latest “block” of Bitcoin transactions is revealed and published to a public network known as the blockchain. As a reward for the decoding efforts, miners receive a set amount of Bitcoin — [6.25 as of April 2021](#). While this process may seem easy, there is a catch. As more miners join in and use their computers to earn Bitcoin, the cryptograms become more complex and require more processing power and energy to solve efficiently.

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enidge plant, Bitcoin mining was a no-brainer. More than 90% of the plant’s capacity was unused, and all they had to do was construct a room full of computers to mine the Bitcoin with that excess energy; [every time the computers at Greenidge successfully solved a cryptogram, the owners would earn over \\$60,000](#). After Bitcoin’s value skyrocketed to more than \$50,000 in April 2021, the plant owners would be making more than \$300,000 for every cryptogram solved.

While an attorney for the company [claimed that the plant would use a maximum of 66 of the plant's 106 MW capacity for Bitcoin mining in April 2021](#), Greenidge Generation Holdings announced its intent to increase mining capacity to 85 MW by the end of 2022 and to 500 MW by 2025. These announcements elicited outrage from environmental activists, which resulted in a march on the plant by a group of protestors in April organized by the Seneca Lake Guardian. [This environmental group focuses on organizing around the Finger Lakes.](#)

Yvonne Taylor, one of the group founders, cited several concerns with the Greenidge Generation Plant — concerns that reflect the real consequences of the plant's operation, particularly those related to water. As an old power plant, it does not have the same closed-loop standards as newer plants, which require water drawn in for cooling to be recycled through the plant system. Instead, a large pipe protrudes from the plant into the lake to take in water, [drawing in up to 139 million gallons per day, cycling it through to cool the machinery in the plant and draining the water into the nearby Keuka Lake outlet](#), a designated fishery populated with trout. The plant's water withdrawal system has significant impacts on wildlife. The former owners of the Greenidge plant conducted a report estimating that [water withdrawals caused the death of nearly 10,000 fish or crayfish annually, while also entrapping 592,000 eggs, larvae, and juvenile fish](#). Meanwhile, the draining of heated water into the Keuka Lake outlet contributes to a decreasing trout population in the lake and an increase in Harmful Algal Blooms (HABs) when the heated water mixes with the rest of the lake. In our interview, Taylor explained that the HABs are a particular concern for community residents, as removing the harmful algae from drinking water is a costly and technologically intensive process.

These ecological impacts have led to fears about the effect of the plant on the community's growing tourism industry. Michael Warren Thomas, a local radio personality who produces shows relating to

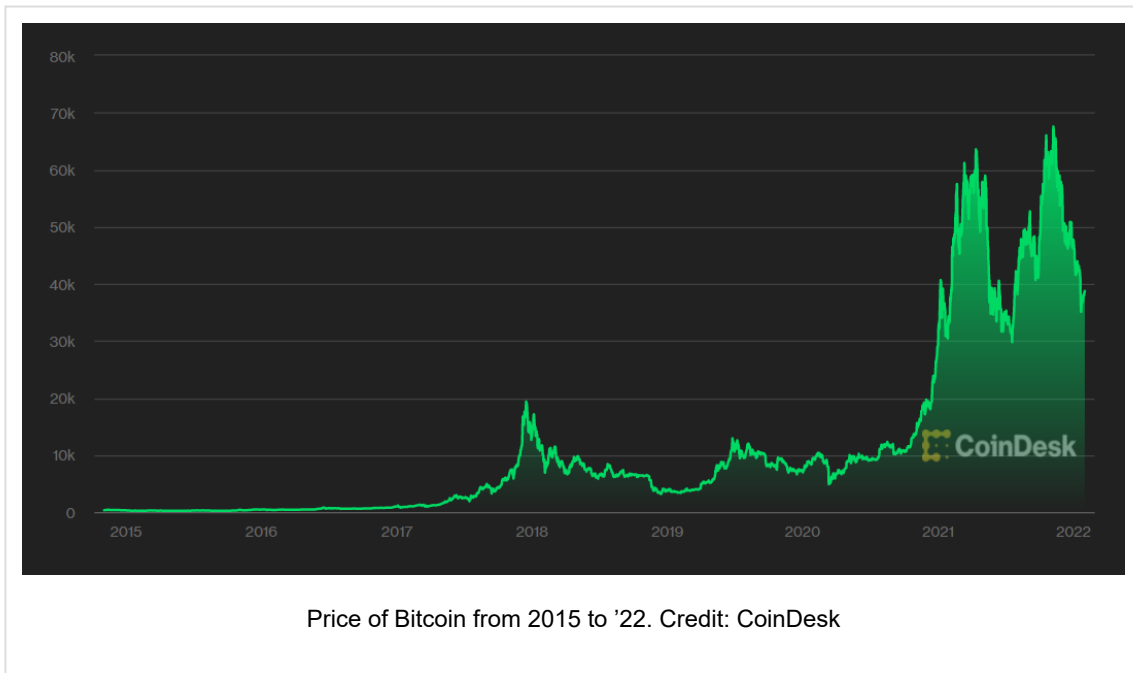
gardening, wine, and food in the Finger Lakes region, detailed those fears in an interview:

*“The Finger Lakes wine industry has built its reputation over generations. They’ve been making wine at the Finger Lakes since the early 1800s, but we’ve only really become a world-class wine region in the last 20 years... do [international wine companies] come here and build a \$10 million winery when there’s a power plant across the lake from you? ... Frankly, I wouldn’t do it.”*

To counter these ecological and economic concerns, Greenidge Generation Holdings has tried to build up its environmentally friendly reputation with the community. In May, the company [announced that its operations at the plant would go entirely carbon neutral by June 1](#). However, this carbon neutrality would not be achieved by transitioning the plant to renewable energy, but by purchasing carbon offsets to account for the hundreds of thousands of tons the plant is emitting into the atmosphere. While this may green the plant’s operations to an extent, it does little in the eyes of the state, which prohibits the electric generations sector from using carbon offsets to account for emissions under the state climate action plan. Essentially, while Greenidge can purchase all of the carbon offsets it wishes, [it will not help New York achieve the state’s ambitious goal of 100% zero-carbon electricity by 2040](#).

State legislators noticed the environmental impact caused by Greenidge and other Bitcoin mining operations and sprang into action. New York State Assemblywoman Anna Kelly introduced a bill in June that would implement a three-year state moratorium on the practice of energy-intensive cryptocurrency mining. However, [union opposition to the bill — driven by fear of job losses — derailed its passage](#). Another legislator, State Sen. Kevin Parker, sponsored a bill that would require state officials to study the viability of renewable energy to power crypto

mining, but it is unclear what impact the bill could ultimately have. As of this writing, no legislation restricts Bitcoin mining in New York or nationally.



Meanwhile, the opportunity for immense financial gain combined with lax government regulation has empowered Greenidge and other firms to expand and construct new operations. In July, the firm [announced its plans to build a second Bitcoin mining operation at a recently closed printing plant in South Carolina](#). This new plant can draw 80 MW of power, two-thirds of which is produced from nuclear energy or other zero-carbon sources. Digihost International, another cryptocurrency firm, is looking to purchase a natural gas power station in Buffalo for Bitcoin mining. Additionally, a crackdown on crypto mining in China, where a significant portion of the world's Bitcoin mining occurs, is [likely to send many more firms to the United States to continue their operations](#).

While the situation around the Greenidge Plant and the larger Bitcoin industry seems bleak, not all hope is lost. In September, Greenidge's air permits with the State of New York expired. Further, New York Department of Environmental Conservation Commissioner Basil



Seggos tweeted, “Greenidge has not shown compliance with NYS climate law.” While not a certainty, it is possible that the company will face new regulations or some other form of enforcement from the state that could compel the plant to either alter its operations or become more environmentally friendly. Nationally, the Biden administration is weighing crackdowns on crypto mining after the hackers behind a ransomware attack on the integral Colonial Pipeline demanded payment in Bitcoin. Regarding the overall Bitcoin mining process, other techniques for blockchain verification do not require such energy-intensive methods. This less energy-intensive model is called Ethereum, the second-highest valued cryptocurrency (just over \$2,800 at the time of writing), which is in the process of transitioning to Proof-of-Stake.

Bitcoin has without a doubt secured the interest of the world of finance through its potential to generate high-value returns, and new firms in the United States are emerging that seek to produce cryptocurrency at a large scale. Unfortunately, these operations have revitalized once unviable fossil-fuel power plants into virtual gold mines that generate millions for the owners, but also pollute the air and water and threaten the growth of more environmentally friendly industries. If the U.S. is to achieve a carbon-neutral future and avoid the harshest perils of climate change, governments must take action to return these fossil-fueled revenants to the historical dustbin from whence they came.

## About the Author ...

Tyler Swanson is a junior from Pecatonica, Ill. He studies Agricultural & Consumer Economics with a concentration in Environmental Economics & Policy. He is minoring in the [Sustainability, Energy, and Environment Fellows Program](#) and Urban Planning. Upon graduating, Tyler hopes to pursue a career studying energy policy.

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WORKS CITED



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