



Blockware Mining, Inc.

Bitcoin Mining Brief by Blockware Mining, Inc.
Interim Joint Committee
Economic Development & Workforce Investment

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Blockware Mining, Inc.

PRESENTERS

Michael Stoltzner
President and CEO
Executive Chairman
Co-Founder of Blockware Mining

Co-Founded and Senior Managing Director Futrex Trading, LLC., A proprietary trading firm founded in 1985 that has traded on the Chicago Mercantile Exchange, the LIFFE Exchange, the Chicago Board of Trade, the Chicago Board Options Exchange and the New York Mercantile Exchange. The firm has employed over 150 employees and has traded billions of dollars in futures and options contracts. 30+ years of experience in managing proprietary trading on worldwide exchanges

Positions held at CME: Member of The Chicago Mercantile Exchange (CME) since 1987, Pit Vice Chairman in Eurodollar Options - five consecutive years, Pit committee member - twelve consecutive years, Pit Supervision committee member - eight consecutive years.

Jeremy Witten
Executive VP of Engineering

Witten oversees the development and rollout of Blockware Mining's new mining facilities, focusing on energy efficiency, utility rate negotiation, system process evaluation, cryptocurrency data center design, and lean manufacturing.

Witten has 15 years of experience building and managing industrial operations, including maintenance, electrical, engineering, environmental compliance, and construction as well as experience conceptualizing and building cryptocurrency data centers. Witten holds a Masters of Mechanical Engineering from the University of Louisville, Kentucky.

Witten said: "Not all mining companies have a commitment to building the best possible operating environment at their facilities. Blockware Mining has taken a serious, engineering-based approach to facility development and are ensuring that facility architecture and design decisions are driven by the goal of ensuring the best return on investment. Building top-flight mining facilities requires an understanding of the key factors including energy efficiency, correct exhaust features, and properly installing mining equipment and Blockware Mining is focused on quality in every aspect of the build."

About Blockware Mining, Inc.

Blockware Mining is a diversified Bitcoin mining infrastructure and colocation service provider headquartered in Chicago, IL. Blockware Mining offers clients one of the most competitive hardware and hosting packages to get miners up and hashing using the latest generation mining equipment. For more information, visit www.blockwaremining.io.



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BACKGROUND ON BITCOIN MINING

[What is Bitcoin Mining and How Does Bitcoin Mining Work?](#)

What Is Bitcoin Mining?

Bitcoin mining is the process by which blocks of transactions are added to the public blockchain and verified. It's also the process by which new Bitcoin is created—a mechanism that both secures the integrity of the blockchain and incentivizes participation in the network.

Miners compete to add new blocks to the blockchain. Mining Bitcoin demands a substantial commitment on the part of miners; it's a costly, time-consuming task, and one that's necessary for the cryptocurrency to work and for people to have faith in its legitimacy.

Over a decade since Bitcoin was created by Satoshi Nakamoto, most people have heard of mining. But what does it really mean—and how do you go about mining Bitcoin?

Mining Bitcoin isn't like digging for gold or coal deep underground. It refers to verifying the transactions made using Bitcoin. Miners are those individuals or companies that sustain and audit the blockchain network that supports the cryptocurrency.

They do so by completing "blocks" of verified transactions, which are added to the blockchain; when a miner completes a block, they are rewarded with Bitcoin.

Mining for Bitcoin isn't as cheap as it once was, but this still doesn't prevent investors from carrying out this activity. The block reward of Bitcoin is the incentive that powers cryptocurrency transactions through legitimizing and monitoring the network. Because this responsibility is carried out by many users throughout the world, Bitcoin is a decentralized cryptocurrency, meaning that it relies on no central authority such as a government or bank for its trustworthiness.

Did you know?

Approximately every four years, the reward for mining Bitcoin is halved, an event known (unsurprisingly) as the "halving". In May 2020, the block reward dropped from 12.5 BTC per block to 6.25 BTC.

Why does Bitcoin need miners?

Mining is, in effect, a process of auditing and verifying Bitcoin transactions to prevent the problem of "double spending". Double spending is where someone with cryptocurrency tries to spend the same coin twice. With physical currency, you can't buy a drink in a bar with a \$20 bill and then pop to the shops to buy some groceries with the same \$20 bill.



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What is Bitcoin (BTC)?

Bitcoin started it all. It was the first cryptocurrency, and launched an industry that now includes thousands of them. But who invented it, how does it work, and why is it so important? We exp...

With cryptocurrency, there is a risk that someone with Bitcoin could make a copy of that Bitcoin and send that to a merchant instead of the real thing. In the real world, the cashier looks at a \$20 bill to ensure it is not fake—and this is what Bitcoin miners are trying to do with cryptocurrency; they are checking to ensure that a transaction has not been made twice.

What is the process of Bitcoin mining and what can you do with it?

Bitcoin uses a consensus mechanism called proof of work.

The process of mining Bitcoin works as follows:

- 1) A miner's computer, called a node, collects and packages individual Bitcoin transactions from the last ten minutes into a block.
- 2) This node competes with other nodes in the network to solve a complicated cryptographic problem to be the first to validate the new block for the blockchain.
- 3) The first miner to solve the problem broadcasts their success to the entire network.
- 4) Other nodes then check if their solution is correct. If correct, the new block is added to the blockchain and the whole process starts again.
- 5) As the miner was first to solve the problem, it gets rewarded with Bitcoin.

Bitcoin mining hardware runs a cryptographic hashing function on a block header.

What that means is that each miner creates a "candidate block" with unconfirmed transactions from the node's memory pool, or mempool. This block includes a block header that summarizes the data inside the block, along with a reference to an existing block in the blockchain and a nonce ("number only used once"). In Bitcoin, the nonce is a whole number somewhere between 0 and 4,294,967,296.

This block header is then put through the SHA256 hash function; if the resulting number is higher than the current target hash, the miner adjusts the nonce and tries again. Miners do this many thousands of times per second. The difficulty target is a 256-bit number; it is adjusted every 2016 blocks (roughly every two weeks), to ensure that a block is mined on average once every 10 minutes.

When a lucky miner's hash function spits out a result that's lower than the current target hash, the block is broadcast to the network. Each node checks that the block header hashes to meet the target, and if confirmed the newly mined block is added to the blockchain. The miner receives a reward of Bitcoin; this transaction, which creates new Bitcoin out of thin air, is known as the "coinbase transaction" and is included in the candidate block.



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These rewards serve to incentivize participation and keep things running smoothly.

The rate at which coins are issued is set by the mining code, ensuring that the time it takes for a miner to win a block is always approximately 10 minutes. This is to protect the system and prevent miners from creating their own Bitcoin.

Every time Bitcoin is mined, the cryptographic problem becomes harder to solve, meaning that miners will require a higher hash rate to succeed in earning block rewards. This means that more computing power is needed to earn the same amount of cryptocurrency.

The first Bitcoin miners used their computers' CPUs to complete the cryptographic problems. Soon, miners discovered that graphics processing units (GPUs) were more effective than CPUs, sparking an arms race in mining hardware. Now, Bitcoin miners use dedicated hardware known as ASIC (application-specific integrated circuit) miners.

Solving cryptographic problems is necessary to protect the Bitcoin network from attacks. To reverse transactions in the blockchain would require 51% of the whole network's computing power. This ensures that any attack is difficult and pointless as an attacker would have to own more mining hardware than anyone else.



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ARTICLES BITCOIN MINING

[New York and Texas are winning the war to attract bitcoin miners](#) - October 9, 2021

A war is brewing among states to attract bitcoin miners, and new data shows that a whole lot of them are headed to New York, Kentucky, Georgia, and Texas.

Within the U.S., 19.9% of bitcoin's hashrate – that is, the collective computing power of miners – is in New York, 18.7% in Kentucky, 17.3% is in Georgia, and 14% in Texas, according to Foundry USA, which is the biggest mining pool in North America and the fifth-largest globally.

A mining pool lets a single miner combine its hashing power with thousands of other miners all over the world, and there are dozens from which to choose.

“This is the first time we’ve actually had state-level insight on where miners are, unless you wanted to go cobble through all the public filings and try to figure it out that way,” said Nic Carter, co-founder of Castle Island Ventures, who presented Foundry’s data at the Texas Blockchain Summit in Austin on Friday. “This is a much more efficient way of figuring out where mining occurs in America.”

But as Carter points out, the Foundry dataset does not account for all of the U.S. mining hashrate, since not all U.S.-based mining farms enlist the services of this pool. Riot Blockchain, for example, is one of the largest publicly-traded mining companies in America, with a huge presence in Texas. They don’t use Foundry, so their hashrate is not accounted for in this dataset – which is part of the reason why Texas’ mining presence is understated.

Though the dataset only captures a portion of the country’s domestic mining market, it does point to nationwide trends that are reshaping the debate around bitcoin’s carbon footprint.

Many of the states ranking the highest are epicenters of renewable energy, a fact which has already begun to recast the narrative among skeptics that bitcoin is bad for the environment.

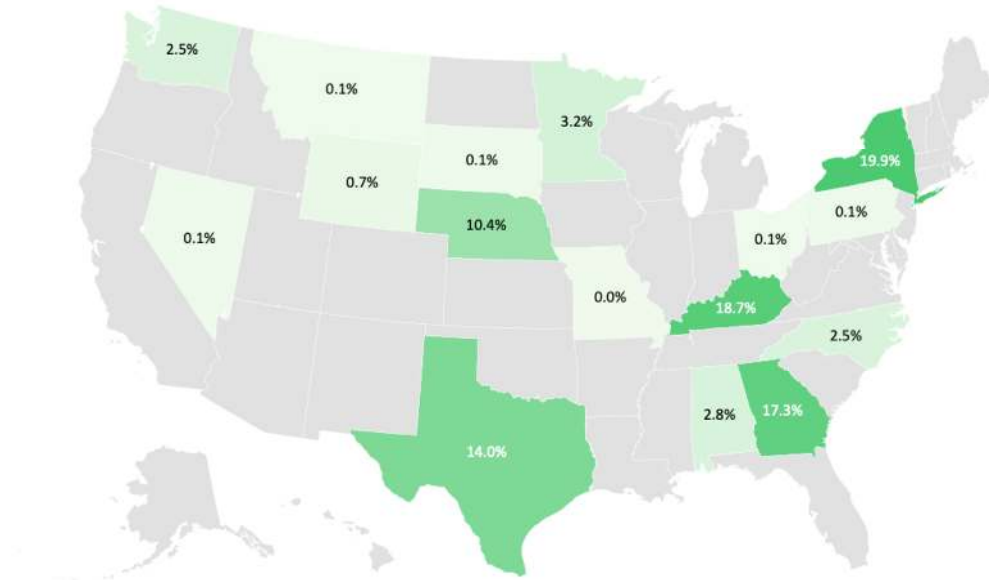
While Carter acknowledges that U.S. mining isn’t wholly renewable, he does say that miners here are much better about selecting renewables and buying offsets.

“The migration is definitely a net positive overall,” he said. “Hashrate moving to the U.S. will mean much lower carbon intensity.”



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U.S. hashrate share by state at Foundry USA Pool



Where did all the miners go

When Beijing decided to kick out all its crypto miners this spring, about half of the bitcoin network went dark practically overnight. While the network itself didn't skip a beat, the incident did set off the biggest migration of bitcoin miners ever seen.

The Foundry dataset shows the largest bitcoin mining operations are in some of the states with the most sources of renewable energy – a game changer for the debate around bitcoin's environmental impact.

Because miners at scale compete in a low-margin industry, where their only variable cost is typically energy, they are incentivized to migrate to the world's cheapest sources of power – which also tend to be renewable.

Take New York, which leads Foundry's ranking. A third of its in-state generation comes from renewables, according to the latest available data from the U.S. Energy Information Administration.

New York counts its nuclear power plants toward its 100% carbon free electricity goal, and critically, New York produces more hydroelectric power than any other state east of the Rocky Mountains. It was the third-largest producer of hydroelectricity in the nation, as well.

New York's chilly climate – plus its previously abandoned industrial infrastructure ripe for repurposing – have also made it an ideal spot for bitcoin mining.



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Crypto mining company Coinmint, for example, operates facilities in New York, including one in a former Alcoa Aluminum smelter in Massena, which taps into the area's abundant wind power, plus the cheap electricity produced from the dams that line the St. Lawrence River. The Massena site, at 435 megawatts of transformer capacity, is billed as one of – if not the – largest bitcoin mining facility in the U.S.

New York was weighing legislation this year to ban bitcoin mining for three years so it could run an environmental assessment to gauge its greenhouse gas emissions. Lawmakers have since largely walked it back.

“Bitcoin mining in New York is actually very low in carbon intensity, given its hydro power, and, as a consequence, if New York were to ban bitcoin in-state, it would probably raise the carbon intensity of the bitcoin network overall,” said Carter. “It would be the complete opposite of what they wanted.”

Other states capturing a large share of America's bitcoin mining industry include Kentucky and Georgia.

Beyond the fact that Kentucky's governor is friendly to the industry, having just passed a law this year that grants certain tax exemptions to crypto mining operations, the state is also known for its hydroelectric and wind power.

Connecting rigs to otherwise stranded energy, like natural gas wells, is another power source. Although coal is also a big player in the energy mix, many mining operations there gravitate to renewables.

And then there's Texas

Texas may rank fourth according to Foundry's data set, but many experts believe there is no question that it is the leading jurisdiction for miners right now.

Some of the biggest names in bitcoin mining have set up shop in Texas, including Riot Blockchain, which has a 100-acre site in Rockdale, and Chinese miner Bitdeer, which is right down the road.

Orders for new ASICs – the specialty gear used to mint new bitcoin – show that tens of thousands more machines are due to be delivered in Texas, according to The Block Crypto.

The appeal of Texas comes down to a few big fundamentals: Crypto-friendly lawmakers, a deregulated power grid with real-time spot pricing, and perhaps most importantly, access to significant excess energy which is renewable, as well as stranded or flared natural gas.

The regulatory red carpet being rolled out for miners also makes the industry very predictable, according to Alex Brammer of Luxor Mining, a cryptocurrency pool built for advanced miners.



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“It is a very attractive environment for miners to deploy large amounts of capital in,” he said. “The sheer number of land deals and power purchase agreements that are in various stages of negotiation is enormous.”

Some miners plug straight into the grid in order to power their rigs. ERCOT, the organization that operates Texas’ grid, has the cheapest utility-scale solar in the nation at 2.8 cents per kilowatt hour. The grid is also rapidly adding wind and solar power.

“You just can’t beat the cost of power in West Texas, and when you couple that with a skilled power management company that can manage your demand response programs, it’s almost unbeatable anywhere else in the world,” continued Brammer.

Deregulated grids tend to have the best economics for miners, because they can buy spot energy.

“They can participate in economic dispatch, which means that they stop buying electricity when prices get high, so you have far more flexibility if you are active in the spot markets,” explained Carter.

Another major energy trend in the bitcoin mining business in Texas is using “stranded” natural gas to power rigs, which both reduces greenhouse gas emissions and makes money for the gas providers, as well as the miners.

Carter says that if this is fully exploited, flared gas in Texas alone could power 34% of the bitcoin network today – which would make Texas not only the clear leader in bitcoin mining in the U.S., but in the world.

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[This map shows the best states for bitcoin mining](#) - September 30, 2021

2021 has been a great year for bitcoin mining in America as new talent — and equipment — flood the market, but some states are definitely more appealing destinations than others.

The latest data from the Global Energy Institute shows the average price of electricity is lowest in states including Texas and Washington, which certainly jibes with the fact that both states are increasingly hot destinations for minting new digital coins.

While the cost of power isn't everything when deciding where to set up shop, it sure goes a long way.

Miners at scale compete in a low-margin industry, where their only variable cost typically is energy, so they are incentivized to migrate to the world's cheapest sources of power.

In California and Connecticut you will pay anywhere from 18 to 19 cents per kilowatt hour, whereas in Texas, Wyoming, Washington, and Kentucky, you will pay less than half that, according to the Global Energy Institute, which puts out an annual electricity price map of the country, using the most recent full year of data available from the U.S. Energy Information Administration.

The institute does warn, however, that “while the energy mix available within a state will play a large role in state electricity prices, energy-limiting policies in some states act to artificially elevate prices, making the price of electricity much higher for consumers and businesses.”

Ultimately, what bitcoin miners care about most is finding low-cost sources of electricity.

This is part of why the U.S. proves especially appealing to prospective miners, given the country is home to some of the cheapest sources of energy on the planet, many of which tend to be renewable.

Fred Thiel, CEO of cryptocurrency mining specialist Marathon Digital Holdings, expects most new miners relocating to North America to be powered by renewables, or gas that is offset by renewable energy credits.

“Mining is price sensitive, so as to seek out the lowest-cost power and the lowest-cost power tends to be renewable because if you're burning fossil fuels ... it has extraction, refinement and transport costs,” Blockstream CEO Adam Back said.

Washington state is a mecca for hydropowered mining farms, while Texas' share of renewables is growing over time, with 20% of its power coming from wind as of 2019.

Electricity costs, however, aren't everything. Friendly policymakers and sufficient infrastructure are also key factors.

Take Texas.



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It has a deregulated power grid that lets customers choose between power providers, and crucially, its political leaders are pro-crypto — dream conditions for a miner looking for a kind welcome and cheap energy sources.

“You are going to see a dramatic shift over the next few months,” said bitcoin mining engineer Brandon Arvanaghi. “We have governors like Greg Abbott in Texas who are promoting mining. It is going to become a real industry in the United States, which is going to be incredible.”

The U.S. has also spent years investing in cryptomining infrastructure, long before it was popular.

When bitcoin crashed in late 2017 and the wider market entered a multiyear cryptocurrency winter, there wasn't much demand for big bitcoin farms. U.S. mining operators saw their opening and jumped at the chance to deploy cheap money to build up the mining ecosystem in the States.

“The large, publicly traded miners were able to raise capital to go make big purchases,” said Mike Colyer, CEO of digital currency company Foundry, which helped bring over \$300 million of mining equipment into North America.

Companies like North American cryptomining operator Core Scientific kept building hosting space all through the depths of the period so that they had the capacity to plug in new gear, according to Colyer. Core, which has operations in North Dakota, North Carolina, Georgia, and Kentucky, is one of the largest providers of blockchain infrastructure and hosting in North America.

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[How the U.S. became the world's new bitcoin mining hub](#) - July 17, 2021

Well before China decided to kick out all of its bitcoin miners, they were already leaving in droves, and new data from Cambridge University shows they were likely headed to the United States.

The U.S. has fast become the new darling of the bitcoin mining world. It is the second-biggest mining destination on the planet, accounting for nearly 17% of all the world's bitcoin miners as of April 2021. That's a 151% increase from September 2020.

"For the last 18 months, we've had a serious growth of mining infrastructure in the U.S.," said Darin Feinstein, founder of Blockcap and Core Scientific. "We've noticed a massive uptick in mining operations looking to relocate to North America, mostly in the U.S."

This dataset doesn't include the mass mining exodus out of China, which led to half the world's miners dropping offline, and experts tell CNBC that the U.S. share of the mining market is likely even bigger than the numbers indicate.

According to the newly-released Cambridge data, just before the Chinese mining ban began, the country accounted for 46% of the world's total hashrate, an industry term used to describe the collective computing power of the bitcoin network. That's a sharp decline from 75.5% in September 2019, and the percentage is likely much lower given the exodus underway now.

"500,000 formerly Chinese miner rigs are looking for homes in the U.S.," said Marathon Digital's Fred Thiel. "If they are deployed, it would mean North America would have closer to 40% of global hashrate by the end of 2022."

The new mining mecca

America's rising dominance is a simple case of luck meeting preparation. The U.S. has quietly been building up its hosting capacity for years.

Before bitcoin miners actually started coming to America, companies across the country made a gamble that eventually, if adequate infrastructure were in place, they would set up shop in the U.S.

That gamble appears to be paying off.

When bitcoin crashed in late 2017 and the wider market entered a multi-year crypto winter, there wasn't much demand for big bitcoin farms. U.S. mining operators saw their opening and jumped at the chance to deploy cheap money to build up the mining ecosystem in the States.

"The large, publicly traded miners were able to raise capital to go make big purchases," said Mike Colyer, CEO of digital currency company Foundry, which helped bring over \$300 million of mining equipment into North America.



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Companies like North American crypto mining operator Core Scientific kept building out hosting space all through the crypto winter, so that they had the capacity to plug in new gear, according to Colyer.

“A majority of the new equipment manufactured from May 2020 through December 2020 was shipped to the U.S. and Canada,” he said.

Read more about cryptocurrencies from CNBC Pro
Cramer says he will sell half of his ether holdings if regulators approve bitcoin ETFs

Bitcoin could hit \$100,000 in the next couple years, Fidelity Investments says

Billionaire Barry Sternlicht explains why he owns bitcoin and ether

Alex Brammer of Luxor Mining, a cryptocurrency pool built for advanced miners, points out that maturing capital markets and financial instruments around the mining industry also played a big role in the industry’s quick ascent in the U.S. Brammer says that many of these American operators were able to start rapidly expanding once they secured financing by leveraging a multi-year track record of profitability and existing capital as collateral.

Covid also played a role.

Though the global pandemic shut down large swaths of the economy, the ensuing stimulus payments that proved a boon for U.S. mining companies.

“All the money printing during the pandemic meant that more capital needed to be deployed,” explained bitcoin mining engineer Brandon Arvanaghi.

“People were looking for places to park their cash. The appetite for large-scale investments had never been bigger. A lot of that likely found its way into bitcoin mining operations in places outside of China,” continued Arvanaghi.

Making it in America

The seeds of the U.S. migration started back in early 2020, according to Colyer. Prior to Beijing’s sudden crackdown, China’s mining dominance had already begun to slip.

Part of the appeal is that the U.S. ticks a lot of the boxes for these migrant miners.

“If you’re looking to relocate hundreds of millions of dollars of miners out of China, you want to make sure you have geographic, political, and jurisdictional stability. You also want to make sure there are private property right protections for the assets that you are relocating,” said Feinstein.

It also helps that the U.S. is also home to some of the cheapest sources of energy on the planet, many of which tend to be renewable. Because miners at scale compete in a low-margin



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industry, where their only variable cost is typically energy, they are incentivized to migrate to the world's cheapest sources of power.

Thiel expects most new miners relocating to North America to be powered by renewables, or gas that is offset by renewable energy credits.

While Castle Island Ventures founding partner, Nic Carter, points out that U.S. mining isn't wholly renewable, he does say that miners here are much better about selecting renewables and buying offsets.

"The migration is definitely a net positive overall," he said. "Hashrate moving to the U.S., Canada, and Russia will mean much lower carbon intensity."

###

ADDITIONAL STORIES

[After the China upheaval, Bitcoin mining looks like one of the most profitable businesses on the planet | Fortune](#)



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BITCOIN MINING ORGANIZATIONS

<https://www.coincenter.org/>

Coin Center is the leading non-profit focused on the policy issues facing cryptocurrencies. We engage in research, educate policymakers, and advocate for sensible regulatory approaches to this technology. (Located in DC)

<https://bitcoinminingcouncil.com/>

The Bitcoin Mining Council is a voluntary and open forum of Bitcoin miners committed to the network and its core principles. We promote transparency, share best practices, and educate the public on the benefits of Bitcoin and Bitcoin mining.



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BITCOIN MINING SUSTAINABILITY REPORT

[Bitcoin Mining Council Survey Confirms Sustainable Power Mix](#)

Bitcoin mining electricity mix increased to 56% sustainable in Q2 2021

AUSTIN, TEXAS - JULY 1, 2021 -- The Bitcoin Mining Council (BMC), a voluntary global forum of Bitcoin mining companies and other companies in the Bitcoin industry, announced the findings of its first quarterly survey focused on two important metrics: electricity consumption and sustainable power mix.

The BMC revealed that it successfully collected sustainable energy information from over 32 percent of the current global Bitcoin network in its first ever voluntary survey. The results of this survey show that the members of the BMC and participants in the survey are currently utilizing electricity with a 67% sustainable power mix. Based on this data it is estimated that the global mining industry's sustainable electricity mix had grown to approximately 56 percent, during Q2 2021, making it one of the most sustainable industries globally.

Moreover, the publication of this data represents the first quarterly release by the BMC, which was founded in May 2021 with support from some of the largest Bitcoin mining companies in the Bitcoin industry along with MicroStrategy and its CEO, Michael Saylor.

In a statement, Mr. Saylor praised the creation of the BMC as an important step to bring more transparency and understanding to the Bitcoin mining industry. He noted that the voluntary submission of Bitcoin mining data by industry participants will help to play an important role in demystifying the Bitcoin mining industry.

"I am pleased to see that the Bitcoin mining industry has come together, voluntarily, to provide critical information to the general public and policymakers, especially as it pertains to clarifying common misconceptions about the nature and scale of Bitcoin energy usage," said Mr. Saylor.

"This survey -- the first quarterly release of many we expect to come -- draws on data from miners around the world. As I've stated before, just because the Bitcoin network is decentralized doesn't mean it has to be disorganized."

Darin Feinstein, founder of Blockcap and Core Scientific, noted that the survey comes at a pivotal moment as the Bitcoin industry sees its mining operations further decentralized as a result of miners leaving China.

"Despite China shutting down over 60 percent of the global Bitcoin network, the Bitcoin network experienced zero downtime, no bailouts, has registered no bankruptcies and simply adapted by redeploying its infrastructure into regions that have greater freedoms," Mr. Feinstein said. "The network remains as strong as ever, it simply shrugs off adversity and moves forward."



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BLOCKCHAIN HIGHER EDUCATION

[CUMBERLANDS FIRST IN KENTUCKY TO OFFER BLOCKCHAIN DEGREE](#) - January 28, 2019

University of the Cumberlands will be the first university in the state – and one of the first in the nation – to offer a graduate degree in blockchain technology. The new Master of Science in Global Business with Blockchain Technology (MS-Blockchain) program is set to begin Summer 2019, and applications are now being accepted.

Blockchain is a digital, distributive ledger which supports bitcoin, ether and bitcoin cash. It is a shared, public ledger of transactions that anyone can impact and no single entity controls. Essentially, it's a spreadsheet in the sky.

To simplify: when someone goes to a store and buys a pack of gum, that person has completed a transaction between themselves and the store. Businesses keep records of all their transactions in order to track their profit, order correct amounts of inventory, recognize any security leaks, and so on. Blockchain is a form of technology that lets companies track all of that more securely and efficiently.

And it is taking the world of transactions by storm.

Blockchain was the No. 1 emerging job in 2018 as evaluated by LinkedIn. A recent survey by PwC discovered that 84 percent of businesses are actively involved with blockchain. Walmart announced in December that it will soon begin requiring produce suppliers to contribute to a blockchain database so the company can pinpoint contamination more rapidly. Major banks and corporations around the world are already exploring the technology's potential. Companies like Amazon, FedEx and UPS which rely on dependable supply chain management and shipping logistics have jumped aboard the blockchain train. And a report by the review site Glassdoor showed that, as of August 2018, U.S. companies had posted 1,775 vacancies in jobs directly related to blockchain technology.

With the combination of the ubiquitous nature of stored information and the associated risks of fraud, the field of blockchain technology can fill a critical need for almost every organization. Businesses' booming need of cutting-edge technology entails the consequent necessity of employees who understand how to use it. Some companies are willing to pay blockchain developers and engineers six-figure salaries.

Currently, only ivy league institutions offer programs devoted to blockchain technology, after which students take an exam to earn a certificate. Cumberlands' program culminates in a master's degree which, to employers, may hold more weight than a certificate earned in only a month or two.

In short, Cumberlands is competing with ivy league schools, offering a degree in something most employers desperately want their workers to understand.



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“This blockchain degree is for active professionals in information technology, business, healthcare, etc. who want to advance their careers and build upon the skills they already possess,” said Donnie Grimes, Vice President for Information Services at Cumberland. “The program will provide a robust, comprehensive education on blockchain technology’s reach and usage. We want our students as prepared as possible to navigate the dynamic field of cryptocurrency well, manage technology with excellence and bolster their reputation within their careers.”

This master’s program will be offered entirely online, though students who wish to include a residency component in their education may do so through Cumberland’s executive degree program format. Since blockchain’s influence is so vast, the program’s focus will be on identifying potential novel applications of the technology in many fields, such as accounting, human resources, marketing, banking, supply chain management, voter registration and real estate.

“Blockchain is much more than cryptocurrency; it’s the most groundbreaking technology since the internet,” said Lois McWhorter, Department Chair of the Hutton School of Business at Cumberland. “It will completely revolutionize standard business practices. With how prominent blockchain is in the marketplace, employers have a massive need to fill positions with people who are well-versed in this technology.”

All programs at Cumberland, including this new blockchain degree program, are regionally accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACSCOC).

Cumberland also offers master’s degree programs in digital forensics, information systems security and information technology, as well as a PhD program in information technology. All graduate programs may be completed entirely online and offer some of the lowest tuition rates in the country.

The University is considering adding an undergraduate blockchain elective course in the coming years. The success of that course will help determine the possible addition of a full undergraduate degree program introducing blockchain to undergraduate students in the future.

More information on blockchain technology – what it is, how it works and what it means to the public – are available on Cumberland’s website at ucumberlands.edu/blockchain.

Located in Williamsburg, Kentucky, University of the Cumberland is an institution of regional distinction offering quality undergraduate, graduate, doctoral and online degree programs. Learn more at ucumberlands.edu.

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