



Riot Blockchain  
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Castle Rock, CO 80109

The Honorable Elizabeth Warren  
309 Hart Senate Office Building  
Washington, DC 20515

The Honorable Sheldon Whitehouse  
530 Hart Senate Office Building  
Washington, DC 20510

The Honorable Jeffrey A. Merkley  
313 Hart Senate Office Building,  
Washington, DC 20510

The Honorable Margaret Wood Hassan  
324 Hart Senate Office Building  
Washington, D.C. 20510

The Honorable Edward J. Markey  
255 Dirksen Senate Office Building  
Washington DC 20510

The Honorable Katie Porter  
1117, Longworth House Office Building,  
Washington, DC 20515

The Honorable Rashida Talib  
1628 Longworth House Office,  
Washington, DC 20515

The Honorable Jared Huffman  
1527, Longworth House Office Building,  
Washington, DC 20515

February 24, 2022

RE: January 27, 2022 letter to Riot Blockchain, Inc.

Dear Senators and Representatives:

Thank you for your letter of January 27, 2022, addressed to Riot Blockchain Inc. (“Riot” or “the Company”) related to our Bitcoin mining operations. Riot is a leader in the Bitcoin mining industry as one of the largest U.S. publicly traded companies listed on Nasdaq. We are proud to build, grow, and support the development of this innovative industry within the United States of America.



## **Overview**

*Our Purpose.* Our mission is simple—we aim to create value and opportunities by supporting the digital economy through Bitcoin mining. We believe securing the Bitcoin blockchain for the future of all Americans through Bitcoin mining will ensure Americans have access to fast, reliable, and secure digital transactions in the coming digital century. We do this through a vertically integrated strategy of innovative engineering solutions, building infrastructure in rural communities, producing a digital asset with a true store of value, and manufacturing parts to mine Bitcoin right here in the United States.

*Transparency.* As a U.S. publicly traded company, Riot remains diligent in our ethical commitment and responsibility to transparently report accurate information to the public. The Company was the first U.S. publicly traded Bitcoin mining company to produce a monthly operations and production update, increasing transparency to the public and our shareholders by reporting operations updates on a monthly basis.

*Economic Value.* Riot is proud to be a part of the global Bitcoin mining industry, which has a market capitalization of more than \$25 billion in North America<sup>1</sup> alone, and an economic impact far beyond that. It is nearly impossible to fully express the economic value and the social impact that Riot brings in words alone. Therefore, the Company invites Members of Congress along with their staff to visit Riot's Whinstone facility for an in-person tour and a demonstration of the Company operations.

## **Bitcoin's Protocol Value**

With more than 100 million users worldwide, Bitcoin is an open monetary network that allows anyone with an internet connection to store wealth securely and make payments anywhere with nearly instant final settlement.

Bitcoin's electricity usage begins during the block addition process and is done so for a significant and direct purpose: to prove, based on an objective metric independent of the system

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<sup>1</sup> According to data collected from the Nasdaq Stock Exchange and the New York Stock Exchange as of December 31, 2021.



itself, in a way that anyone can verify for themselves, that a certain amount of time has passed between a new block and its predecessor.

This model of decentralized agreement is so revolutionary within the field of computer science that it has been named after the creator of Bitcoin. It is called *Nakamoto Consensus* and the technique used to achieve it is called *Proof-of-Work* (“PoW”). In this process, the electricity does the actual work, and the proof is the presentation of a rare hash function output which could only have been found by repetitive guesswork, *proving the input of work*.<sup>2</sup>

In physics, it is understood that work is a time-dependent concept, PoW enables the Bitcoin network to cooperate on a decentralized clock, which is what enables its otherwise uncoordinated participants to agree on a *shared history of transactions*.

So long as enough time has passed since the last block, as proven by the input work, a new block can be added to the chain. The consideration by all network participants of the chain with the most accumulated work as the correct and agreed-upon chain is a fundamental consensus rule of Bitcoin.

### **Bitcoin’s Social Impact and the Environment**

PoW’s energy usage is purposeful to assist with the creation of an honest, and trustless system, which makes counterfeiting and record tampering prohibitively costly. For a global, freely available, politically independent monetary system, the ability to resist attackers is an incredible and necessary feature.

#### *Social Impact*

PoW enables otherwise unavailable monetary properties that cannot be replicated by physical commodity monies or politically dependent monies. Bitcoin as a digital asset and a store of value has little to no exposure to inflation and non-market influences that requires no bank account or credit to own, access, exchange, and use. This further enables the opportunity for disenfranchised

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<sup>2</sup> Christopher Beniksen, A Closer Look at the Environmental Impact of Bitcoin Mining (March 30, 2021), <https://coinshares.com/research/closer-look-environmental-impact-of-bitcoin-mining>.



and previously neglected minority communities to opt-in to an inclusive financial system that empowers people and communities around the globe.

A recent example of Bitcoin moving society to a more balanced financial system has been demonstrated by the Legislative Assembly of El Salvador's recent adoption of Bitcoin as a legal tender.<sup>3</sup> It is estimated that traditional money services providers like Western Union and MoneyGram will lose the opportunity to take in predatory fees of approximately \$400 million a year in commissions for remittances, thanks to the country's Bitcoin adoption.<sup>4</sup>

Through Bitcoin mining, North America is well-positioned to continue taking the lead and to further empower economic advancement and financial inclusion worldwide. This is thanks in large part to the twenty-five publicly traded Bitcoin mining companies headquartered in the United States and Canada.

### *Environment*

To put energy consumption it into simple context, globally, PoW accounts for roughly 0.27% of energy consumption – less than gold mining or residential air conditioners.<sup>5</sup>

Riot is a founding member of The Bitcoin Mining Council (BMC), a voluntary global forum of Bitcoin mining companies and other companies in the Bitcoin industry. BMC estimated that the global mining industry's sustainable electricity mix had grown to approximately 58.5%, during Q4 2021, up 1% from Q3 2021, making it one of the most sustainable industries globally. In Q4 2021, the global Bitcoin Network's estimated technological efficiency grew by 9%, an increase

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<sup>3</sup> Santiago Perez and Caitlin Ostroff, *El Salvador Becomes First Country to Adopt Bitcoin as National Currency*, Wall Street Journal, Sept. 7, 2021, <https://www.wsj.com/articles/bitcoin-comes-to-el-salvador-first-country-to-adopt-crypto-as-national-currency-11631005200>.

<sup>4</sup> MacKenzie Sigalos, *El Salvador's New Bitcoin Plan Could Cost Money Providers Like Western Union and Others \$400 Million a Year, says President Bukele*, CNBC, Sep. 9, 2021, <https://www.cnbc.com/2021/09/09/el-salvador-bitcoin-move-could-cost-western-union-400-million-a-year.html>

<sup>5</sup> Key Facts on Bitcoin & the Environment, Bitcoin Policy Institute, [https://uploads-ssl.webflow.com/61d2416d1d63f07ecbfd010c/61e9eb242d86a2103e051913\\_Key%20Facts%20on%20Bitcoin%20%26%20the%20Environment-03%20\(2\).pdf](https://uploads-ssl.webflow.com/61d2416d1d63f07ecbfd010c/61e9eb242d86a2103e051913_Key%20Facts%20on%20Bitcoin%20%26%20the%20Environment-03%20(2).pdf)



from Q3 2021, to 19.3 petahash per MW.<sup>6</sup> We believe this trend will continue because of the efficiency driven nature of Bitcoin mining.

Due to its location-agnostic nature and desire for cheap, and unused or stranded energy, Bitcoin mining drives more demand for renewable energy than the typical U.S. energy consumer.

Recent environmental projections have determined that even if Bitcoin's price rises to \$490,000, Bitcoin mining would peak at 0.9% of global carbon emissions in 2027 and decline thereafter.<sup>7</sup>

### **Riot's Current Operations and Energy Consumption**

Riot currently wholly owns two U.S.-based subsidiaries: Whinstone, U.S. Inc. (Whinstone), a digital infrastructure company; and ESS Metron LLC, a world-class electrical equipment component engineering and manufacturer. Riot began as a company in 2017, trading on NASDAQ with a focus on developing and supporting the emerging Bitcoin mining industry within the United States. Riot began mining at a small facility in Oklahoma City, Oklahoma, and later moved its Bitcoin mining equipment (computers) to be hosted at Coinmint LLC's (Coinmint) facility located in Messina, New York. In 2021, Riot completed the purchase of Whinstone, an infrastructure-focused data center based in Rockdale, Texas.

We believe it is important to highlight at the outset Bitcoin mining is first and foremost a people-based business. Riot's Whinstone facility is built and operated by employees in a wide array of roles. These include, but are not limited to, construction team members, construction contractors, electrical engineers, electrical contractors, information technology. engineers, miner maintenance technicians, administrative support, security teams, inventory teams, among others.

The Bitcoin mining industry creates many good-paying jobs in economically neglected rural areas. In Rockdale, TX, Whinstone employs nearly 200 full-time, benefited employees in addition to over 400 full-time contractors. This facility has become the single largest employer in Milam County, TX and has significantly contributed to an increase in sales tax revenue by

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<sup>6</sup> Q4 Bitcoin Mining Council Survey Confirms Improvements in Sustainable Power Mix and Technological Efficiency, Jan. 18, 2021, <https://bitcoinminingcouncil.com/q4-bitcoin-mining-council-survey-confirms-sustainable-power-mix-and-technological-efficiency/>

<sup>7</sup> See *supra* note 5.

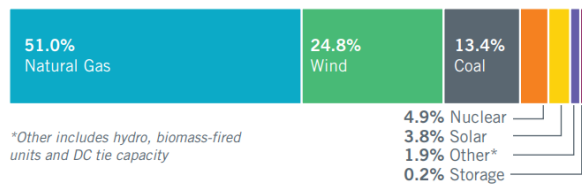


Milam County. In 2021 alone, the County’s sales tax revenue increased more than 54% over 2020 due in large part to the economic activity surrounding Whinstone and the jobs Riot created. Mining “farms” often anchor employers in small communities that were negatively affected by globalization, including our Whinstone location, which sits beside a shuttered Alcoa site.

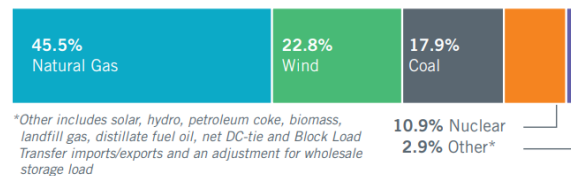
The Bitcoin mining equipment that Riot currently deploys at Coinmint’s facility utilizes nearly exclusively hydroelectricity, a zero-emission, sustainable energy source, consuming approximately 51 megawatts (“MW”) in total capacity. This renewable alternative is driven by the local Moses Saunders Dam in Messina County, in upstate New York. At its Whinstone facility, Riot has approximately 350 MW of developed capacity that is in the process of being utilized by both its self-mining Bitcoin operations, and operations hosted for institutional clients. Whinstone’s dedicated long-term power supply contract is for on-grid power which is generated from mixed-generation resources. The Electric Reliability Council of Texas (ERCOT) produced a generation capacity fuel report for 2021 showcasing a reduction in coal reliance of 25.14%, with a 20% increase in renewables, and with wind and solar comprising 28% of the entire grid.<sup>8</sup>

**2021 Generating Capacity**

*Reflects operational installed capacity based on the December 2020 CDR report*



**2020 Energy Use**



382 billion kilowatt-hours of energy were used in 2020, a 0.6 percent decrease compared to 2019.

Bitcoin mining provides immense economic value and job creation, but also helps to ensure the robustness, cleanliness and long-term financial viability of the broader electric grid. With a stable baseload demand and its ability to be curtailed and turned off at a moment’s notice, Bitcoin mining gives electricity generators the opportunity to increase stability in the grid. Ultimately, this gives grid operators and planners the flexibility to make more intermittent renewables a larger component of the overall grid mix. Long-term power contracts and baseload

<sup>8</sup> ERCOT, Fact Sheet, February 2022, [https://www.ercot.com/files/docs/2022/02/08/ERCOT\\_Fact\\_Sheet.pdf](https://www.ercot.com/files/docs/2022/02/08/ERCOT_Fact_Sheet.pdf).



flexibility present an opportunity for Bitcoin miners to help defray costs for residential consumers and incentivize utilities to invest in new renewable energy sources, knowing they have a willing and ready customer for the energy produced. This allows for immediate monetization of energy that would otherwise be wasted, driving down overall electricity costs. In other words, it can act as a monetary battery.<sup>9</sup> (Bendiksen, 2021)

In February 2022, Riot’s Whinstone facility voluntarily began to reduce power to its Bitcoin mining equipment ahead of an upcoming Texas winter storm. Riot Chief Executive Officer, Jason Les, and Whinstone U.S., CEO Chad Harris, were in communication with the Texas Governor’s office along with other local elected officials, providing details about preparations to curtail power usage. During the prior year’s 2021 winter storm in Texas, the Whinstone facility was entirely powered down during the eight days of high-power demand in other grid locations. These successful efforts to ensure ERCOT grid stability are the latest example of how Bitcoin mining companies are partners with our communities and utilities.<sup>10</sup> After recent actions taken by Whinstone to plan for the necessity of electricity conservation considering winter storms, operational transparency and communication with state officials, and execution of that plan to conserve electricity in times of great need, federal and state officials recently wrote that we “set the gold-standard for this developing industry” in Texas.

### **Projections and Future Plans**

To continue building a more fair and equitable economic future, Riot’s Whinstone facility, located in a small rural community which prior to Whinstone, did not have many technical or engineering job opportunities, has produced expansion plans for 700 MW of cutting-edge Bitcoin mining infrastructure on the 100-acre site. When this expansion is complete, the Whinstone facility will be comprised of approximately 500,000 sq ft of data center space. While the Company anticipates this expansion to be completed by June of 2022, Riot cannot make

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<sup>9</sup> See *supra* note 2.

<sup>10</sup> Michael Smith, Biggest Texas Bitcoin Miner Shuts Down Ahead of Cold Blast, Bloomberg, Feb. 2, 2022, <https://www.bloomberg.com/news/articles/2022-02-02/biggest-bitcoin-miner-in-texas-will-shut-for-cold-blast-if-asked>



exact predictions due to factors outside of its control, mainly, global supply chain and lasting delays from the Covid-19 pandemic.

The full power capacity of Whinstone will not be utilized until a full deployment of Bitcoin mining equipment on behalf of Riot or its institutional hosting clients is completed. It is estimated that by the completion of the fourth quarter in 2022, the Company will be utilizing approximately 570 MW of mixed-use energy across our self-mining operations at Whinstone (317 MW), our hosting customers at Whinstone (200 MW), and our hosted computers at Coinmint (51 MW).

In short, our power usage both relies on and helps promote expanded use of renewable energy.

### **Relationship with Electricity Providers**

Riot enters long-term contracts for electricity supply from a Retail Electricity Provider (REP), purchasing a fixed quantity of electricity at a fixed price for most of the Company's energy load. Should a facility use more than the purchased quantity, Riot purchases additional energy at the market price when it is consumed.

If energy is in high demand at that time, signaled through a higher price, it incentivizes us to reduce usage during that high demand. Should a facility use less than the purchased quantity, that power is then consumed by the market, and Riot receives a credit based on the real-time price against our pre-purchase price. Should the Company anticipate that demand will outstrip supply, such as in the winter storms of February 2021 and 2022, Riot's Whinstone facility can curtail energy usage and redirect our previously purchased power to other consumers to meet that increased demand.

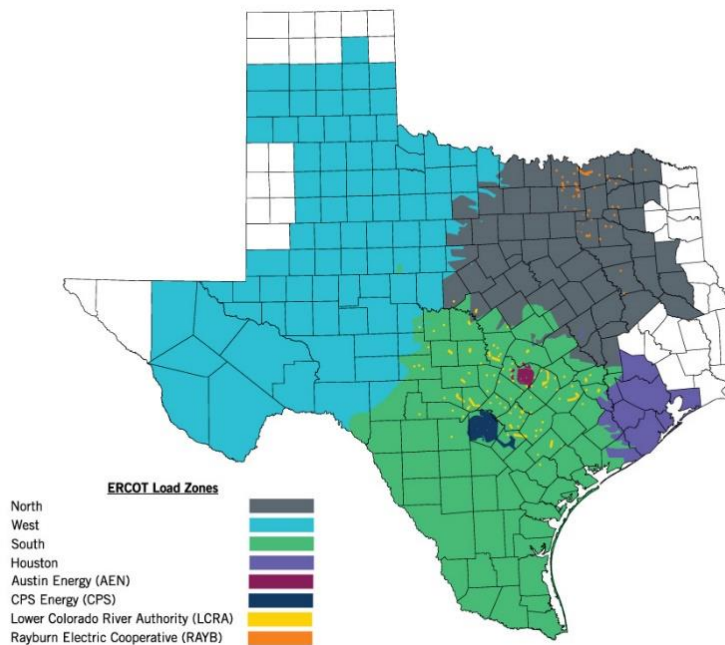
The power the Company uses is delivered through the regulated utility responsible for maintaining the grid. In the case of Whinstone, ERCOT operates the grid and manages the market by coordinating supply, demand, and the use of infrastructure to transmit power. Riot also participates in ERCOT's non-energy Ancillary Service Programs, designed to provide standby capacity by either putting more power into the grid or reducing power use from the grid. This is commonly known as Controllable Load Response (CLR), or Four Curtailment Periods



(4CP). As part of Riot’s participation in 4CP during the 2021 calendar year, the Company shut down or curtailed power over 70 times, redirecting our power allotment back into the ERCOT grid.

### Effect on Local Families and Businesses

As a participant in the Texas deregulated energy market, we represent approximately 0.3% of peak demand (250MW/75,000MW). Local residential customers also participate in the same large market, and electricity is priced to consumers in mainly 4 large load zones, so any single load is unlikely to affect the price for that pool and for local usage. In the map below, Whinstone is in the “South” zone, color coded in green.<sup>11</sup> So, while Whinstone contributes greatly to local economies, employment, grid stability, and innovation, it is unlikely to negatively affect local energy prices.



### Conclusion

<sup>11</sup> <https://www.ercot.com/news/mediakit/maps>



We believe that both industry and policymakers must continue to develop technologies and policies that address the dangers of climate change. Bitcoin mining, like all energy-consuming industries, relies on electricity generation. The carbon emissions of energy generation are determined largely by the source of that generation and whether it is renewable. As discussed above, Bitcoin mining is uniquely beneficial and supportive of renewable energy generation and resilient power grids. This fact, along with the technological advancement, job creation, and social and economic value that Bitcoin mining is creating – right here in the United States – means that the industry currently is, and must be, a part of the solution.

We also believe Bitcoin miners are uniquely positioned to help drive the entire Bitcoin and blockchain industries towards innovation and sustainability using the proof-of-work protocol—the only means of providing true trustless end-to-end encryption and verification for digital transactions available to us today. Our Company strongly believes industry participation and input is vital to the development and implementation of commonsense rules that help the United States continue to be the global leader in the decentralized currency and blockchain technology space.

Thank you again for this opportunity to highlight Riot Blockchain’s work as an industry leader and innovator, and we look forward to being a resource to your offices on this important issue.

Sincerely,

A handwritten signature in black ink that reads "Jason Les". The signature is written in a cursive, flowing style.

Jason Les  
Chief Executive Officer  
Riot Blockchain, Inc.