

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2021

OR

TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from: to:

Commission file number: 001-33675

RIOT BLOCKCHAIN, INC.

(Exact name of registrant as specified in its charter)

Nevada

84-1553387

(State or other jurisdiction of Incorporation or organization)

(I.R.S. Employer Identification No.)

3855 Ambrosia Street, Suite 301, Castle Rock, CO

80109

(Address of principal executive offices)

(Zip Code)

Registrant's telephone number, including area code (303) 794-2000

Securities registered under Section 12(b) of the Exchange Act:

Common Stock no par value per share

RIOT

The Nasdaq Capital Market

(Title of class)

(Trading Symbol)

(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Securities Exchange Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act: Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act: Yes No

Note - Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Exchange Act from their obligations under those Sections.

Indicate by check mark whether the registrant (1) filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the shares of common stock, no par value, held by non-affiliates of the registrant as of June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$3.1 billion, based on the closing sale price per share of the registrant's common stock as reported by the Nasdaq Capital Market on such date.

As of March 8, 2022, the registrant had 117,273,760 shares of its common stock, no par value per share, outstanding, which was the only class of its registered securities outstanding as of that date.

Portions of the registrant's definitive proxy statement to be delivered to stockholders and filed with the Securities and Exchange Commission in connection with the registrant's Annual Stockholders' Meeting to be held in 2022 are incorporated by reference into Part III of this Annual Report on Form 10-K. Only those portions of the definitive proxy statement that are specifically incorporated by reference herein shall constitute a part of this Annual Report on Form 10-K.

RIOT BLOCKCHAIN, INC.
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RIOT BLOCKCHAIN, INC.

As used in this Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (this “Annual Report”), the terms “we,” “us,” “our,” the “Company,” the “Registrant,” “Riot Blockchain,” and “Riot” mean Riot Blockchain, Inc. and its consolidated subsidiaries, unless otherwise indicated.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report and the documents incorporated by reference herein contain forward-looking statements that involve risks and uncertainties, as well as assumptions that may not materialize or prove to be correct, which could cause our results to differ materially from those expressed in or implied by such forward-looking statements. All statements other than statements of historical fact are forward-looking statements, including, but not limited to, statements concerning: our plans, strategies and objectives for future operations; new equipment, systems, technologies, services or developments, such as our investment in our development and implementation of industrial-scale immersion-cooled Bitcoin mining hardware; future economic conditions, performance or outlook; future political conditions; the outcome of contingencies; potential acquisitions or divestitures; the number and value of Bitcoin rewards we earn from our mining operations; expected cash flows or capital expenditures; our beliefs or expectations; activities, events or developments that we intend, expect, project, believe, or anticipate will or may occur in the future; and assumptions underlying or based upon any of the foregoing. Forward-looking statements may be identified by their use of forward-looking terminology, such as “believes,” “expects,” “may,” “should,” “would,” “will,” “intends,” “plans,” “estimates,” “anticipates,” “projects” and similar words or expressions. You should not place undue reliance on these forward-looking statements, which reflect our management’s opinions only as of the date the statements are made and are not guarantees of future performance or actual results. Forward-looking statements are made in reliance on the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the U.S. Private Securities Litigation Reform Act of 1995.

The following are some of the risks, factors, and uncertainties we believe could cause our actual results to differ materially from our historical results or our current expectations or projections expressed in such forward-looking statements:

- our strategic decision to concentrate on Bitcoin mining ties the success of our business to the success of Bitcoin;
- our Bitcoin mining operations are subject to unique industry risks outside of our control that could have material adverse effects on our business, including, among others: risks associated with the need for significant amounts of low-cost and reliable electricity; changes to laws pertaining to mining or holding Bitcoin; our need for consistent, high-speed, and highly secure Internet connectivity; intense competition for new miners and the necessary infrastructure to support industrial-scale Bitcoin mining operations; cybersecurity risks; increased global Bitcoin network hash rate and difficulty; and competition for a fixed supply of Bitcoin rewards;
- our Bitcoin mining operations are capital-intensive and can only be successful if our mining costs are lower than the value of the Bitcoin we mine, which has been subject to significant price volatility; therefore, our ability to make accurate projections about our business and future contingencies is significantly impaired as a result of this price volatility and other risks largely outside of our control, such as our suppliers’ inability to perform or timely deliver the new miners, parts, or services we purchase from them, as well as other risks we may not anticipate;
- we have made significant investments in our development of industrial-scale immersion-cooled Bitcoin mining infrastructure, which is subject to unique risks and uncertainties, and if we are unable to effectively implement this innovative technology because of these risks or other factors, we may not realize the benefits we anticipate from our substantial investment in immersion-cooled Bitcoin mining on the schedule we anticipate, if at all;
- our Bitcoin mining operations are concentrated in discrete locations, and a natural disaster, unforeseen environmental issues, or other significant disruption affecting our Mining operations could severely impact our ability to operate and could have a material adverse effect on our business, results of operations, financial condition, and the market price of our securities;

- we cannot predict the consequences of future geo-political events, such as international conflict and related sanctions, COVID-19 and the ongoing global supply chain crisis that has resulted, on our business, our suppliers, and the markets in which we operate, which significantly impairs our ability to make accurate projections of future revenues, costs, and risks, and we may be unable to properly insure against these risks as a result;
- the growing public awareness of Climate Change and the negative media attention given to the energy consumption of cryptocurrency mining may lead to the implementation of new taxes, laws and regulations affecting our access to energy, a decline in the demand for new Bitcoin, or other factors that could have a material adverse effect on our business, results of operations, and the market price of our securities, regardless of our efforts to control the climate impact of our operations;
- we may be required to record a significant charge to earnings if the value of our goodwill, amortizable intangible assets, or Bitcoin holdings become impaired due to a change in circumstances indicating that these assets' carrying value may not be recoverable, such as a sustained decline in the value of a Bitcoin from the value recorded when we mine it, a decline in our stock price and market capitalization, reduced future cash flow estimates, and other changes to our industry and the macroeconomic environment in which we operate;
- we have made, and expect to continue to make, strategic acquisitions and investments, which entail significant risks and uncertainties that could adversely affect our business, results of operations, and financial condition, such as unforeseen difficulties in integrating the operations of an acquired business into our own, and we may fail to realize the anticipated benefits of these acquisitions on the schedule we expect, if at all;
- we will need to raise additional capital to fund our business objectives, goals, and strategies; however, volatility in the trading price of shares of our common stock may jeopardize our ability to raise the necessary capital;
- we could be negatively impacted by a security breach, through cyber-attack, cyber-intrusion, insider threats or otherwise, or other significant disruption of our information technology networks and related systems;
- global macroeconomic conditions have given rise to significantly increased competition for labor, and we may be unable to hire the qualified and talented personnel we need for our operations and to carry out our business strategy, or to retain our workforce without substantially increasing our compensation and other benefits, which could increase our operating costs significantly;
- our reputation and ability to do business may be impacted by the improper conduct of our employees, agents or business partners; and
- the outcome of litigation or arbitration in which we are involved from time to time is unpredictable, and an adverse decision in any such matter could have a material adverse effect on our financial condition, results of operations, cash flows and equity.

Additional details and discussions concerning some of the various risks, factors, and uncertainties that could cause future results to differ materially from those expressed or implied in our forward-looking statements in this Annual Report can be found under Part I, Item 1A. "Risk Factors" beginning on page 13 of this Annual Report and under Part II, Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" beginning on page 32 of this Annual Report, which may be updated, supplemented, and amended by our subsequent disclosures contained in the reports and other filings we make with the Securities and Exchange Commission (the "SEC").

The risks, factors and uncertainties disclosed herein and in our other filings are not exhaustive. Additional risks and uncertainties not known to us or that we currently believe not to be material as of the date hereof may adversely impact our business, financial condition, results of operations and cash flows. It is not possible for our management to accurately and completely predict all risks, factors, and uncertainties that may be applicable to our business, nor can we know the extent of the impact of such risks, factors, and uncertainties on our business. Should any of the risks, factors, or uncertainties we discuss in this Annual Report or the documents incorporated by reference herein, or any of those risks, factors, and uncertainties which we do not foresee or which we do not believe to be material as of the date hereof occur, our actual results to differ materially from those expressed in any forward-looking statements we may make, and they could have a material adverse effect on our business, results of operations, and financial condition.

The forward-looking statements made in this Annual Report speak only as of the date on which they are made. We undertake no obligation to update any forward-looking statements made in this Annual Report to reflect events or circumstances after the date of this Annual Report or to reflect new information, actual results, revised expectations, or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations expressed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. All forward-looking statements attributable to us are expressly qualified by these cautionary statements.

Industry and Market Data

Information regarding market and industry statistics contained in this Annual Report has been obtained from industry and other publications that we believe to be reliable, but that are not produced for purposes of securities filings. We have not independently verified any market, industry or similar data presented in this Annual Report and cannot assure you of its accuracy or completeness. Further, we have not reviewed or included data from all sources. Forecasts and other forward-looking information obtained from third-party sources are subject to the same qualifications and the additional uncertainties accompanying any estimates of future market size, revenue and market acceptance of products and services. As a result, investors should not place undue reliance on any such forecasts and other forward-looking information.

PART I

ITEM 1. BUSINESS

General

We are a vertically integrated Bitcoin mining company principally engaged in enhancing our capabilities to mine Bitcoin. We also provide the critical mining infrastructure for our institutional scale clients to mine Bitcoin at our Bitcoin mining facility in Rockdale, Texas (the “Whinstone Facility”). Our Whinstone Facility is believed to be the largest Bitcoin mining facility, as measured by developed capacity, in North America.

We operate in an environment which is consistently evolving based on the proliferation of Bitcoin and cryptocurrencies in general. A significant component of our strategy is to effectively and efficiently allocate capital between opportunities that we believe will generate the highest return on our capital.

We operate in three business segments: (1) Bitcoin Mining (“Mining”), (2) Data Center Hosting (“Hosting”), and (3) Electrical Products and Engineering (“Engineering”).

Business Segments

Bitcoin Mining

At December 31, 2021, our Mining business operated approximately 30,907 miners, with a hash rate capacity of 3.1 exahash per second (“EH/s”), utilizing approximately 96 megawatts (“MW”) of capacity. In 2021, we mined 3,813 Bitcoin, which represented an increase of 269% over the 1,033 Bitcoin we mined in 2020. Based on our existing operations and expected deliveries of miners we have purchased, we anticipate having approximately 120,150 miners in operation, utilizing approximately 370 MW of capacity by the end of 2022.

Our Mining operations are focused on maximizing our ability to successfully mine Bitcoin by growing our hash rate (the amount of computer power we devote to supporting the Bitcoin blockchain) to increase our chances of successfully verifying transactions to be recorded in the decentralized digital ledger comprising the Bitcoin blockchain (a process known as “solving a block”). Generally, the greater share of the Bitcoin blockchain’s total network hash rate (the aggregate hash rate deployed to solving a block on the Bitcoin blockchain) represented by a miner’s hash rate, the greater the miner’s chances of earning Bitcoin rewards. As additional miner operators have entered the market in response to increased demand for Bitcoin, the Bitcoin blockchain’s network hash rate has grown. We expect this trend to continue, so we expect to need to continue to grow our hash rate to compete in our dynamic and highly competitive industry.

We plan to achieve this growth by acquiring highly specialized computer servers (known in the industry as “miners”) built to operate application-specific integrated circuit (“ASIC”) chips designed specifically to mine Bitcoin and deploying them at-scale in our Whinstone Facility, including in immersion-cooled environments. The Whinstone Facility has a dedicated best-in-class team that supports our mining operations and provides us with the necessary infrastructure and available power capacity for us to further scale our Mining business in the future. We believe ASIC miners are the most effective and energy-efficient miners available today, and we believe deploying them at-scale, including in immersion-cooled environments, with its more efficient heat dissipation and reduced wear-and-tear versus traditional air-cooled hardware, will enable us to grow our hash rate and optimize the output and longevity of our miners once they are deployed.

During the year ended December 31, 2021, we executed additional purchase orders totaling \$480 million with Bitmain Technologies Limited (“Bitmain”) for an additional 82,500 ASIC miners, including 30,000 of Bitmain’s latest generation Antminer model S19XP (140 TH/s) miners, and 52,500 S19j and S19j Pro miners, including 43,500 model S19j (90 TH/s) miners and 9,000 model S19j Pro (100 TH/s) miners, with anticipated monthly delivery and deployment schedules set through December 2022. For additional discussion of our purchase orders with Bitmain, see the discussion under the heading “Mining Operations” in Part II, Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Annual Report, as well as the purchase orders themselves, which are incorporated by reference as exhibits to this Annual Report.

We also deploy miners with Coinmint, LLC (“Coinmint”) under a month-to-month co-location mining services agreement (the “Coinmint Agreement”) at Coinmint’s Massena, New York facility (the “Coinmint Facility”). We continually evaluate our mining performance at the Coinmint Facility to determine the optimal deployment strategy.

We have primarily held the Bitcoin we mine on our balance sheet as a Bitcoin mining company, but we are constantly evaluating our Bitcoin retention policy to determine the most efficient use of that asset.

Data Center Hosting

On May 26, 2021, we completed the strategic acquisition (the “Whinstone Acquisition”) of Whinstone US, Inc. (“Whinstone”) from Northern Data AG, a German stock corporation (the “Northern Data”). For more information on the Whinstone Acquisition, see Part II, Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the heading “Strategic Acquisitions” and Part II, Item 8. “Financial Statements and Supplementary Data” under Note 4, “Acquisitions” included in the Notes to our Consolidated Financial Statements.

Our Hosting business is operated at our Whinstone Facility and focuses on providing co-location services for institutional-scale Bitcoin mining companies. The Whinstone Facility provides the critical infrastructure and workforce necessary for institutional-scale miners to deploy and operate their miners. We provide our clients with licensed space in specifically designed buildings to operate large quantities of miners with access to sufficient amounts of electricity to operate those miners under colocation agreements.

In pursuit of achieving the most efficient power strategy, Whinstone combines fixed low-cost power agreements, real-time spot power procurement and income from ancillary power services revenue. Riot benefits from this low-cost energy to maximize its production margins. The combination of Riot and Whinstone allows us to rapidly scale our self-mining business at one of the world’s largest mining facilities with power costs among the lowest in the industry.

After closing the Whinstone Acquisition, we announced a large-scale expansion of the Whinstone Facility by 400 MW, including 200 MW of immersion-cooled Bitcoin mining infrastructure, which is anticipated to bring the Whinstone Facility to 700 MW in total capacity of Bitcoin mining infrastructure. The expansion of the Whinstone Facility will provide us with the necessary infrastructure to efficiently operate our miners, scale our future operations and provide additional expansion opportunities in our Hosting business. After completion of the Whinstone expansion, the Whinstone Facility will be comprised of seven dedicated Bitcoin mining structures, designated as Buildings A through G.

As of December 31, 2021, our 400 MW expansion at the Whinstone Facility had achieved multiple progress milestones while navigating the challenges with the current state of the global supply chain, including the completion of the substation expansion to 700 MW, successful installation of the substation busbar, and 400 MW of high-voltage transformers. Whinstone also completed construction of Building F, our first self-mining building dedicated to immersion-cooled Bitcoin mining, while also advancing on its second immersion-cooled dedicated building, Building G. In December 2021, Whinstone also received most of the structural components required for Buildings D, E, and G. The construction completion timeline is currently on-time, despite global supply chain shortages and delays.

Whinstone also generates engineering and construction services revenue from hosting customers on site, including revenue derived from the fabrication, installation and maintenance services and deployment assistance on immersion-cooling technology for Bitcoin mining.

On December 1, 2021, we acquired all of the issued and outstanding equity interests of Ferrie Franzmann Industries, LLC (d/b/a ESS Metron) (“ESS Metron”). ESS Metron is one of the world’s leading designers and manufacturers of power distribution equipment. Our strategic acquisition of ESS Metron provides us with access to critical electrical components and engineering services in connection with our development of our Hosting business infrastructure at the Whinstone Facility, as well as with potential future expansion projects. ESS Metron is a key strategic partner in our development and deployment of our immersion-cooling technology. For more information on the ESS Metron Acquisition, see Part II, Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the heading “Strategic Acquisitions” and Part II, Item 8. “Financial Statements and Supplementary Data” under Note 4, “Acquisitions” included in the Notes to our Consolidated Financial Statements.

Mining Pools

A “mining pool” is a service operated by a mining pool operator that pools the resources of individual miners to share their processing power over a network and split rewards according to the amount of hash rate they contributed to the probability of placing a block on the blockchain. Mining pools emerged in response to the growing difficulty and network hash rate competing for Bitcoin rewards on the Bitcoin blockchain, as a way of lowering costs and de-risking an individual miner’s mining activities.

The mining pool operator provides a service that coordinates the computing power of the independent mining enterprises participating in the mining pool. The pool uses software that coordinates the pool members’ hash rate, identifies new block rewards, records how much work all the participants are doing, and assigns Bitcoin rewards to its participants in proportion to the hash rate each participant contributed to the successful mining transaction. Fees are paid to the mining pool operator to cover the costs of maintaining the pool and are deducted from amounts we may otherwise earn. Fees (and payouts) fluctuate and historically have been no more than approximately 2% per reward earned, on average. Mining pools are subject to various risks such as disruption and down time. In the event that a pool experiences down time or is not yielding returns, our results may be impacted.

Competition

Bitcoin mining at scale is a highly competitive environment that operates 24/7 around the world. The primary drivers of competition are demand for Bitcoin, sufficient capital resources to acquire large quantities of high-quality miners, the ability to secure these miners from a limited number of suppliers on rapid delivery schedules, and the ability to execute on those miner deployments with the best-in-class mining infrastructure to generate the highest productivity.

Recently, there has been a significant increase in the number of Bitcoin miners attempting to expand their mining operations at scale. As more Bitcoin miners enter the space, we expect additional pressure on the industry, with greater competition for access to miners and mining infrastructure which is in limited supply.

Data center hosting-particularly in the Bitcoin mining space-is also highly competitive. Institutional Bitcoin mining customers demand access to mining infrastructure that can supply large amounts of reliable, low-cost electricity, with a best-in-class team that can execute on deploying miners on compressed timelines. We have entered into a long-term power purchase agreement with our energy supplier at the Whinstone Facility, which allows us to control our power costs and project them long-term, enabling us to focus on developing best-in-class mining infrastructure and delivering best-in-class services.

Research and Development

During 2021, we announced the first industrial scale deployment of 200 MW of immersion-cooled Bitcoin mining at the Whinstone Facility. We expect to continue developing immersion-cooling Bitcoin mining technologies as we build new infrastructure. We anticipate immersion-cooling technology will present many unique opportunities to increase efficiencies in Bitcoin mining. We are constantly evaluating new and emerging technologies in the Bitcoin ecosystem to make our mining operations more efficient.

Materials and Suppliers

We maintain several key supplier relationships that are important to our business to secure mining hardware and infrastructure components and other materials. Given the complexity of mining hardware, there are few suppliers that can produce miners at scale. Our historic purchase orders with Bitmain have future delivery schedules that can extend out many months before those miners are delivered to our Whinstone Facility. These fluctuations in delivery timelines requires us to purchase miners well in advance of when we anticipate deploying those miners.

Our expansion at the Whinstone Facility requires large quantities of electrical infrastructure components and construction materials. We seek to procure these materials from our suppliers in sufficient quantities so that we can deploy miners at scale on accelerated timelines. Further, our immersion-cooled Bitcoin mining requires large volumes of specialized non-conductive fluid, with limited manufacturers. We have procured most of our anticipated key materials for the expansion of the Whinstone Facility.

Regulatory

Cryptocurrency mining is largely an unregulated activity at both the state and federal level. We anticipate that cryptocurrency mining will be a focus for increased regulation in the near- and long-term, and we cannot predict how future regulations may affect our business or operations.

State regulation of cryptocurrency mining is important with respect to where we conduct our mining operations. Our Whinstone Facility is located in the State of Texas, which is one of the most favorable regulatory environments for cryptocurrency miners. However, we also have operations in New York, which has generally been more aggressive in its regulation of cryptocurrency. Current New York regulations, in our view, do not impact our decision to operate our miners at the Coinmint Facility in Massena, New York; however, if the regulatory landscape changes, we would have to evaluate whether to relocate our miners to our Whinstone Facility in Texas, which could be costly and we would not be able to operate the miners while they are being relocated.

In January 2022, we received a letter from a group of Senators and members of Congress requesting information about our current and planned energy usage. On February 24, we replied to the letter and provided the Senators and members of Congress with the information they requested.

Further, in March 2022, the United States announced plans to establish a unified federal regulatory regime for cryptocurrency, and a group of United States Senators sent a letter to the United States Treasury Department asking Treasury Secretary Yellen to investigate Treasury's ability to monitor and restrict the use of cryptocurrencies to evade sanctions imposed by the United States. We are unable to predict the impact that any new regulations may have on our business at the time of filing this Annual Report. We continue to monitor and proactively engage in dialogue on legislative matters related to our industry.

As the regulatory and legal environment evolves, we may become subject to new laws, such as further regulation by the SEC and other agencies, which may affect our mining and other activities. For additional discussion regarding our belief about the potential risks existing and future regulation pose to our business, see Part I, Item 1A. "Risk Factors" beginning on page 13 of this Annual Report.

Environmental

There are increasing concerns over the large energy usage of Bitcoin mining and its effects on the environment. Many mainstream media reports focus exclusively on the energy requirements of Bitcoin mining and cite it as an environmental concern. However, those reports tend to omit the important benefits associated with that energy consumption. For instance, in February 2021 and 2022, we voluntarily reduced our operations and curtailed our energy usage to allow our energy provider to redirect our power allotment back into the ERCOT market. By curtailing our operations and reducing our energy usage, we immediately help to stabilize the grid by redirecting our power allotment back out into the ERCOT market where it can be delivered to the areas of greatest need, such as heating homes and powering hospitals, helping to reduce the frequency and impact of power failures and price surges. In exchange for powering down our systems in response to these instances of high electricity demand, we receive the difference between our cost of power and the price at which it is sold on the ERCOT market (less applicable fees payable to our consultants who assist with our participation in the ERCOT Demand Response Program), which ultimately benefits us, other consumers participating in the ERCOT market, and the overall health of the Texas grid.

Human Capital Resources

At December 31, 2021, we had a total workforce of approximately 335 employees across our entire organization and subsidiaries, including professionals in engineering, information and technology, operations, construction, finance, legal, communications and Bitcoin mining. Of our total workforce, approximately 285 employees were in engineering, construction and Bitcoin mining operations and approximately 50 were in a general and administrative support function, such as information and technology, finance, legal and communications. Approximately 53% of our workforce was in Colorado and 44% was in Texas.

Our strategy with human capital resources is to align the interests of our employees with our key long-term success drivers. In execution of this philosophy, we adopted a long-term performance incentive plan in August 2021 under our Riot Blockchain, Inc. 2019 Equity Incentive Plan, as amended. Under this performance plan, all eligible employees are granted performance-based restricted stock units (“PSUs”) that vest based on our achievement of certain performance milestones as an organization. Certain eligible employees under the performance plan would be eligible to receive cash in lieu of PSU awards based on our achievement of these same performance milestones. We believe our performance plan is a key incentive for our employees that aligns their long-term interests with our long-term objectives as an organization. Our management team believes our relations with our employees to be good.

We want to attract a pool of diverse and best-in-class candidates and foster their career growth once they become employees. We seek to hire the best talent available, rather than solely rely on educational background, and have provided job openings, including in local communities and large cities, for candidates from various backgrounds. Our goal is a long-term, growth-oriented career for every employee. We also believe that our ability to retain our workforce is dependent on our ability to foster an environment that is sustainably safe, respectful, fair and inclusive of everyone and promotes diversity, equity and inclusion inside and outside of our business.

We compare salary and wages against quantitative benchmarks and adjust to ensure wages are competitive, and have a robust process for ensuring pay equity across the Company. In addition, we provide a comprehensive range of benefits options, including medical plan options for employees and family members.

Immersion-cooling

In October 2021, in connection with the 400 MW expansion of Whinstone, we announced that 200 MW of this expansion would be committed to utilizing immersion-cooling technology. This development encompasses two buildings currently under construction which are expected to host approximately 46,000 of the S19 Series Antminer ASIC miners we have purchased from Bitmain, which are expected to be delivered and deployed on a rolling monthly basis throughout 2022.

When miners are immersion-cooled, they operate in a more stable environment that is better able to dissipate the heat generated by the miners’ operation, allowing the equipment to run at sustained higher productivity rates for longer periods of time. Based on industry data and the Company’s own preliminary immersion-cooling test results, an estimated 25% increase in hash rate is expected, with an estimated potential to increase our miners’ performance by as much as 50% over traditional air-cooled techniques. We are continuing to test our immersion-cooling mining operations and, if our desired performance metrics are achieved, we plan to leverage our infrastructure development capabilities to expand the implementation of our immersion-cooled Bitcoin mining hardware to increase our Bitcoin mining hash rate without relying solely on purchasing additional new miners and mining equipment, which we believe will result in increased operating efficiencies, and, thus, improved capital efficiencies.

Mining Results

Mining Production and Cryptocurrency Sales

The Company measures the success of its operations, in one respect, by the number and U.S. Dollar (“\$”) value (in thousands of \$) of the cryptocurrency rewards it earns from its Mining activities. The following table presents additional information regarding our Mining operations, including cryptocurrency production and sales of the cryptocurrency the Company mines. During 2021 we only mined Bitcoin, and during 2020 and 2019, nearly all of our operations were focused on mining Bitcoin.

	Quantities (in coins)	Amounts
Balance at January 1, 2019	164	\$ 707
Revenue recognized from cryptocurrencies mined	944	6,741
Mining pool operating fees	—	(135)
Purchase of miner equipment with cryptocurrencies	(9)	(99)
Proceeds from sale of cryptocurrencies	(585)	(3,196)
Realized gain on sale/exchange of cryptocurrencies	—	665
Impairment of cryptocurrencies	—	(844)
Balance at December 31, 2019	514	3,839
Revenue recognized from cryptocurrencies mined	1,033	11,984
Mining pool operating fees	—	(146)
Proceeds from sale of cryptocurrencies	(500)	(8,298)
Realized gain on sale/exchange of cryptocurrencies	26	5,184
Impairment of cryptocurrencies	—	(989)
Cryptocurrencies received from sale of equipment	5	52
Balance at December 31, 2020	1,078	11,626
Revenue recognized from cryptocurrencies mined	3,812	184,422
Proceeds from sale of cryptocurrencies	(6)	(295)
Realized gain on sale/exchange of cryptocurrencies	—	253
Impairment of cryptocurrencies	—	(36,462)
Balance at December 31, 2021	4,884	\$ 159,544

As the above table shows, we increased the quantity of Bitcoin rewards earned from our Mining operations from 1,033 Bitcoin mined in fiscal year 2020, to 3,812 Bitcoin mined in fiscal year 2021, representing an increase of approximately 269% in the number of Bitcoin mined. The revenue we recognized from our Mining activities increased from approximately \$12.0 million during fiscal year 2020 to \$184.4 million during fiscal year 2021, representing an increase of approximately 1,439% in revenue from our Mining operations. The increase was due to higher Bitcoin values in the 2021 period, averaging \$45,744 per coin as compared to \$11,461 per coin in the 2020 period and an increase in the number of miners deployed from 7,043 as of December 31, 2020 to 30,907 as of December 31, 2021.

The revenue we recognized from our Mining activities increased from approximately \$6.7 million during fiscal year 2019 to \$12.0 million during fiscal year 2020, representing an increase of approximately 78%. The increase was due to higher Bitcoin values in the 2020 period, averaging \$11,461 per coin as compared to \$7,405 per coin in the 2019 period and an increase in the number of miners deployed from 4,000 as of December 31, 2019 to 7,043 as of December 31, 2020. See under the heading “Factors Affecting Profitability” below.

Factors Affecting Profitability

Market Price of Bitcoin

Our business is heavily dependent on the spot price of Bitcoin. The prices of cryptocurrencies, including Bitcoin, have experienced substantial volatility, meaning that high or low prices may be based on speculation and incomplete information, may be subject to rapidly changing investor sentiment, and may be influenced by factors such as technology, regulatory void or changes, fraudulent actors, manipulation, and media reporting. Bitcoin (as well as other cryptocurrencies) may have value based on various factors, including their acceptance as a means of exchange by consumers and producers, scarcity, and market demand which are beyond our control.

Halving

Further affecting the industry, and particularly for the Bitcoin blockchain, the cryptocurrency reward for solving a block is subject to periodic incremental halving. Halving is a process designed to control the overall supply and reduce the risk of inflation in cryptocurrencies using a Proof-of-Work consensus algorithm. At a predetermined block, the mining reward is cut in half, hence the term “halving”. For Bitcoin, our most significant cryptocurrency asset to which the majority of our mining power is devoted, the reward was initially set at 50 Bitcoin currency rewards per block. The Bitcoin blockchain has undergone halving three times since its inception as follows: (1) on November 28, 2012 at block height 210,000; (2) on July 9, 2016 at block height 420,000; (3) on May 11, 2020 at block height 630,000, when the reward was reduced to its current level of 6.25 Bitcoin per block. The next halving for the Bitcoin blockchain is anticipated to occur in May 2024 at block height 840,000. This process will reoccur until the total amount of Bitcoin currency rewards issued reaches 21 million and the theoretical supply of new Bitcoin is exhausted, which is expected to occur around 2140. Many factors influence the price of Bitcoin, and potential increases or decreases in prices in advance of or following a future halving is unknown.

Network Hash Rate and Difficulty

Generally, a Bitcoin miner’s chance of solving a block on the Bitcoin blockchain and earning a Bitcoin reward is a function of the miner’s hash rate, relative to the global network hash rate (i.e., the aggregate amount of computing power devoted to supporting the Bitcoin blockchain at a given time). As demand for Bitcoin has increased, the global network hash rate has increased rapidly, and as more adoption of Bitcoin occurs, we expect the demand for new Bitcoin will likewise increase as more mining companies are drawn into the industry by this increased demand. Further, as more and increasingly powerful miners are deployed, the network difficulty for Bitcoin has increased. Network difficulty is a measure of how difficult it is to solve a block on the Bitcoin blockchain, which is adjusted every 2016 blocks (every 2 weeks approximately) so that the average time between each block remains ten minutes. A high difficulty means that it will take more computing power to solve a block and earn a new Bitcoin reward, which, in turn, makes the Bitcoin network more secure by limiting the possibility of one miner or mining pool gaining control of the network. Therefore, as new and existing miners deploy additional hash rate, the global network hash rate will continue to increase, meaning a miner’s share of the global network hash rate (and therefore its chance of earning Bitcoin rewards) will decline if it fails to deploy additional hash rate at pace with the industry.

For further discussion of the factors affecting our profitability, see the discussion under Part II, Item 7 “Management’s Discussion and Analysis” under the heading “Summary of Mining Results” beginning on page 35 of this Annual Report, as well as the discussion of various risks, factors, and uncertainties we believe may affect our revenue and results of operations under Part I, Item 1A. “Risk Factors” beginning on page 13 of this Annual Report.

Performance Metrics

We seek to mine Bitcoin by using our miners to solve complex cryptographic algorithms to support the Bitcoin blockchain (in a process known as “solving a block”). In return for solving a block, we receive a Bitcoin, depending on the blockchain, which we can hold for our account and attempt to sell on the market to generate a profit.

Hash rate

Miners generally measure their capability in terms of hash rate, which is measured in terms of the number of cryptographic hashing algorithms solved (or “hashes”) per second. Generally, miners (or mining pools) with a greater hash rate relative to the global Bitcoin network hash rate deployed by miners on the Bitcoin blockchain at a given time will, over time, have a greater chance of earning a Bitcoin reward, as compared to miners with relatively lower total hash rates.

However, as the relative market price for Bitcoin increases, more miners are encouraged to attempt to mine Bitcoin, which increases Bitcoin’s global network hash rate. Therefore, to remain competitive, miners seek to continually increase their total hash rate, creating a feedback loop: as Bitcoin gains popularity and its relative market price increases, more miners attempt to mine Bitcoin and its network hash rate is increased; in response, existing miners and new miners devote more and more hash rate to the Bitcoin blockchain by adding more increasingly powerful miners to attempt to ensure their ability to earn additional Bitcoin rewards, and, in response, the network difficulty of the Bitcoin network is increased to maintain the pace of new block additions, spurring miners to seek to deploy yet further hash rate to earn the same relative number of new Bitcoin rewards. In theory, this process should continually replicate itself until the supply of available Bitcoin is exhausted.

In response, miners have attempted to achieve greater hash rate by deploying increasingly sophisticated miners in ever greater quantities. This has become the Bitcoin mining industry's great "arms race." There are very few manufacturers of miners capable of producing a sufficient number of miners of adequate quality to meet this need, and scarcity results, leading to higher prices. Compounding this phenomenon, it has been observed that some manufacturers of Bitcoin miners may increase the prices for new miners as the market price of Bitcoin increases. Further, these manufacturers have been impacted by the ongoing global supply chain crisis resulting from COVID-19, both in terms of increased prices for the components of these new miners resulting from the constrained supply of the semiconductors used in the production of the highly specialized ASIC chips miners rely on, and in terms of labor costs to manufacture new miners as workforces are affected by increased absenteeism due to COVID-19 restrictions and employee burnout. Thus, miner manufacturers are subject to increasing price pressures due to both increased demand for new miners and decreased supply of necessary components and labor, ultimately leading to higher prices for new miners.

Intellectual Property

We actively use specific hardware and software for our Bitcoin mining operations. The Bitcoin blockchain is generally built on open-source code and, in certain cases, the source code and other software assets we use in our mining operations may be subject to an open-source license. For these works, we adhere to the terms of any license agreements that may be in place. We also rely upon the intellectual property rights of others in certain respects in connection with our immersion-cooling technology.

We currently rely upon trade secrets, trademarks, service marks, trade names, copyrights, and other intellectual property rights, and to license the use of such intellectual property rights owned and controlled by others. In addition, we have developed and may further develop certain proprietary software and hardware applications in connection with Bitcoin mining operations, including our immersion-cooled Bitcoin mining developments.

Corporate Information

Our principal executive office is located at 3855 Ambrosia Street, Suite 301, Castle Rock, CO 80109, which is where our records are kept and the principal business address for our Chief Financial Officer and accounting staff, and our telephone number is (303) 794-2000.

We were incorporated on July 24, 2000 in the State of Colorado under the name AspenBio, Inc. We have gone through several subsequent name changes and, effective October 19, 2017, we adopted our present corporate name, Riot Blockchain, Inc., and changed our state of incorporation to Nevada.

Our website address is www.riotblockchain.com.

Available Information

You can access, free of charge, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to these reports as filed with the SEC under the Securities Exchange Act of 1934, as amended on the SEC's website www.sec.gov. These documents may also be accessed on our website: www.riotblockchain.com. These documents are placed on our website as soon as is reasonably practicable after their filing with the SEC. The information contained in, or that can be accessed through, the website is not part of this Annual Report on Form 10-K.

ITEM 1A. — RISK FACTORS

Certain factors may have a materially adverse effect on our business, financial condition, and results of operations, including the risk, factors, and uncertainties described under this Part I, Item 1A, and elsewhere in this Annual Report. This is not an exhaustive list, and there are other factors that may be applicable to our business that are not currently known to us or that we currently do not believe are material. Any of these risks could have an adverse effect on our business, financial condition, operating results, or prospects, which could cause the trading price of our common stock to decline, and you could lose part or all of your investment. You should carefully consider the risks, factors, and uncertainties described below, together with the other information contained in this Annual Report, as well as the risk, factors, uncertainties, and other information we disclose in other filings we make with the SEC before making an investment decision regarding our securities.

Risks Related to Our Ability to Grow Our Business

If we fail to grow our hash rate, we may be unable to compete, and our results of operations could suffer.

Generally, a Bitcoin miner's chance of solving a block on the Bitcoin blockchain and earning a Bitcoin reward is a function of the miner's hash rate (i.e., the amount of computing power devoted to supporting the Bitcoin blockchain), relative to the global network hash rate. As demand for Bitcoin has increased, the global network hash rate has increased, and as more adoption of Bitcoin occurs, we expect the demand for Bitcoin will increase, drawing more mining companies into the industry and further increasing the global network hash rate. As new and more powerful miners are deployed, the global network hash rate will continue to increase, meaning a miner's chance of earning Bitcoin rewards will decline unless it deploys additional hash rate at pace with the industry. Accordingly, to compete in this highly competitive industry, we believe we will need to continue to acquire new miners, both to replace those lost to ordinary wear-and-tear and other damage, and to increase our hash rate to keep up with a growing global network hash rate.

We plan to grow our hash rate by acquiring newer, more effective and energy-efficient miners. These new miners are highly specialized servers that are very difficult to produce at scale. As a result, there are limited producers capable of producing large numbers of sufficiently effective miners, and, as demand for new miners has increased in response to increased Bitcoin prices, we have observed the price of these new miners has increased. If we can't acquire sufficient numbers of new miners or access sufficient capital to fund our acquisitions, our results of operations and financial condition, which could adversely affect investments in our securities.

We may be impacted by macroeconomic conditions due to the global COVID-19 pandemic and the resulting global supply chain crisis.

Global trade conditions and consumer trends that originated during the COVID-19 pandemic continue to persist and may also have long-lasting adverse impact on us and our industry. For example, pandemic-related issues have exacerbated port congestion and intermittent supplier shutdowns and delays, resulting in additional expenses to expedite delivery of new miners, as well as critical materials needed for our expansion plans. Further, miner manufacturers have been impacted by the constrained supply of the semiconductors used in the production of the highly specialized ASIC chips miners rely on, and increased labor costs to manufacture new miners as workforces and global supply chains continue to be affected by COVID-19, which has ultimately lead to higher prices for new miners. Thus, until the global supply chain crisis is resolved and these extraordinary pressures are alleviated, we expect to continue to incur higher than usual costs to obtain and deploy new miners and we may face difficulties obtaining the new miners we need at prices or in quantities we find acceptable, if at all, and our business and results of operations may suffer as a result.

In addition, labor shortages resulting from the pandemic may lead to increased difficulty and labor costs in hiring and retaining the highly qualified and motivated people we need to conduct our business and execute on our strategic growth initiatives. Sustaining our growth plans will require the ongoing readiness and solvency of our suppliers and vendors, a stable and motivated production workforce, and government cooperation, each of which may be affected by macroeconomic factors outside of our immediate control.

We cannot predict the duration or direction of current global trends or their sustained impact. Ultimately, we continue to monitor macroeconomic conditions to remain flexible and to optimize and evolve our business as appropriate, and we will have to accurately project demand and infrastructure requirements globally and deploy our workforce and capital resources accordingly. If we experience unfavorable global market conditions, or if we cannot or do not maintain operations at a scope that is commensurate with such conditions or are later required to or choose to suspend such operations again, our business, prospects, financial condition and operating results may be harmed.

We expect the cost of acquiring new miners to continue to be affected by the global supply chain crisis.

Similarly, the global supply chain crisis, coupled with increased demand for computer chips, has created a shortfall of semiconductors, resulting in challenges for the supply chain and production of the miners we employ in our Bitcoin mining operations. The miners are highly specialized servers built around ASIC chips, which very few manufacturers are able to produce in sufficient scale and quality to suit our operations. As a result, the cost to produce these miners has increased, which their manufacturers have passed on to purchasers like us. Therefore, until the global supply chain crisis is resolved and these extraordinary pressures are alleviated, we expect to continue to incur higher than usual costs to obtain and deploy new miners, which could adversely affect our financial condition and results of operations.

We may not be able to timely complete our future strategic growth initiatives or within our anticipated cost estimates, if at all.

As part of our efforts to grow our hash rate and remain competitive in the market, we acquired thousands of new state-of-the-art miners from their manufacturer in 2020 and 2021, which we have begun to deploy at our Whinstone Facility. To accommodate these new miners, we are expanding the Whinstone Facility's capacity to 700 MW of electrical power through the construction of four new 100 MW structures and the associated power and facilities infrastructure needed to operate them for industrial scale Bitcoin mining. Moreover, we have carried out this expansion during the ongoing global supply chain crisis and COVID-19, and our costs of supplies, labor, and material have increased as a result. While our present expansion project is proceeding on time as expected, we cannot guarantee we will complete this expansion (or any future strategic growth initiatives) on time or within our cost estimates, if at all, due in part to the ongoing effects of the global supply chain crisis related to COVID-19 and changing conditions within the United States labor market. If we are unable to complete our planned expansion on schedule and within our anticipated cost estimates, our deployment of newly purchased miners may be delayed, which could affect our competitiveness and our results of operation, which could have a material adverse effect on our financial condition and the market price for our securities.

We may be unable to access sufficient additional capital for future strategic growth initiatives.

The expansion of our miner fleet and of our Whinstone Facility have been capital-intensive projects, and we anticipate that future strategic growth initiatives will likewise be capital-intensive. We expect to raise additional capital to fund these future strategic growth initiatives; however, we may be unable to do in a timely manner, in sufficient quantities, or on terms acceptable to us, if at all. If we are unable to raise the additional capital needed to execute these future strategic growth initiatives, we may be less competitive in our industry and our results of operations and financial condition may suffer, and the market price for our securities may be materially and adversely affected.

Expansion of our Whinstone Facility potentially exposes us to additional risks.

We are expanding and expect to continue to expand our Whinstone Facility, which potentially exposes us to significant risks we may otherwise not be exposed to, including risks related to, among other sources: construction delays; lack of availability of parts and/or labor, increased prices, and delays for data center equipment; labor disputes and work stoppages, including interruptions in work due to the ongoing COVID-19 pandemic; unanticipated environmental issues and geological problems; delays related to permitting and approvals to open from public agencies and utility companies; and delays in site readiness leading to our failure to meet commitments made in connection with such expansion.

All construction related projects depend on the skill, experience, and attentiveness of our personnel throughout the design and construction process. Should a designer, general contractor, significant subcontractor or key supplier experience financial problems or other problems during the design or construction process, we could experience significant delays, increased costs to complete the project and/or other negative impacts to our expected returns.

If we are unable to overcome these risks and additional pressures to complete our expansion projects in a timely manner, if at all, we may not realize their anticipated benefits, and our business and financial condition may suffer as a result.

Failure to successfully integrate acquired businesses could negatively impact our balance sheet and results of operations.

Strategic acquisitions such as the Whinstone Acquisition and the ESS Metron Acquisition are an important element of our growth strategy and the success of any acquisition we make depends in part on our ability to integrate the acquired business and realize anticipated synergies. Integrating acquired businesses may involve unforeseen difficulties and may require a disproportionate amount of our management's attention and may require us to shift our financial and other resources.

For example, we may encounter challenges in the integration process such as: challenges and difficulties associated with managing the resulting larger and more complex company; conforming administrative and corporate structures and standards, controls, procedures and policies, business cultures, and compensation and benefits structures, coordinating geographically dispersed operations; and our ability to deliver on our strategy going forward.

Further, our acquisitions may subject us to new liabilities and risks, some of which may be unknown. Although we and our advisors conduct due diligence on the operations of businesses we acquire, there can be no guarantee that we are aware of all liabilities of an acquired company. These liabilities, and any additional risks and uncertainties related to an acquired company not known to us or that we may deem immaterial or unlikely to occur at the time of the acquisition, could negatively impact our future business, financial condition and results of operations.

We can give no assurance that we will ultimately be able to effectively integrate and manage the operations of any acquired business or realize anticipated synergies. The failure to successfully integrate the cultures, operating systems, procedures and information technologies of an acquired business could have a material adverse effect on our financial condition and results of operations.

We may experience increased compliance costs as a result our strategic acquisitions.

The financial statements and internal controls of both Whinstone and ESS Metron have not, historically, been required to be in compliance with Section 404 of the Sarbanes-Oxley Act of 2002 (“Sarbanes-Oxley Act”). The accounting costs of bringing our subsidiaries’ financial records and internal controls in alignment with the Sarbanes-Oxley Act following these strategic acquisitions have been within our expectations; however, we may encounter unanticipated costs. Further, future strategic acquisitions could carry substantial compliance burdens, which may limit our ability to realize the anticipated benefits of such acquisitions, and which may require our management and personnel to shift their focus to such compliance burdens and away from their other functions. Such increased costs and compliance burdens could affect our ability to realize the anticipated benefits of such strategic acquisitions, and our business, results of operations, and financial condition may suffer as a result.

We have financed our strategic growth primarily by issuing new shares of our common stock in public offerings, which dilutes the ownership interests of our current stockholders, and which may adversely affect the market price of our securities.

We have raised capital to finance our strategic growth of our business through public offerings of our common stock, and we expect to need to raise additional capital through similar public offerings to finance the completion of current and future expansion initiatives. We may not be able to obtain additional debt or equity financing on favorable terms, if at all, which could impair our growth and adversely impact our existing operations. If we raise additional equity financing, our stockholders may experience significant dilution of their ownership interests, and the per share value of our common stock could decline. Furthermore, if we engage in debt financing, the holders of any debt we issue would likely have priority over the holders of shares of our common stock in terms of order of payment preference. We may be required to accept terms that restrict our ability to incur additional indebtedness or take other actions including terms that require us to maintain specified liquidity or other ratios that could otherwise not be in the interests of our stockholders.

We have a history of operating losses, and we may report additional operating losses in the future.

Our primary focus is on Bitcoin mining, and we have recorded historical losses and negative cash flow from our operations when the value of Bitcoin we mine does not exceed our associated costs. Further, as part of our strategic growth plans, we have made capital investments in expanding our Mining operations, including the expansion of our Whinstone Facility, increased our employee base, and incurred additional costs associated with owning and operating a self-mining facility. However, future market prices of Bitcoin are difficult to predict, and we cannot guarantee that our future Mining revenue will exceed our associated costs.

Risks Related to the Price of Bitcoin

Our ability to achieve profitability is largely dependent on the price of Bitcoin, which has historically been volatile.

Our primary focus on our Bitcoin mining operations and the associated expansion of our Whinstone Facility is largely based on our assumptions regarding the future value of Bitcoin, which has been subject to significant historical volatility and may be subject to influence from malicious actors, real or perceived scarcity, political, economic, and regulatory conditions, and speculation making its price more volatile or creating “bubble” type risks for the trading price of Bitcoin. Further, unlike traditional stock exchanges, which have listing requirements and vet issuers, requiring them to comply with rigorous listing standards and rules, and which monitor transactions for fraud and other improprieties, markets for Bitcoin and other cryptocurrencies tend to be underregulated, if they are regulated at all. Less stringent cryptocurrency markets have a higher risk of fraud or manipulation and any lack of oversight or perceived lack of transparency could reduce confidence in the price of Bitcoin and other cryptocurrencies, which could adversely affect the price of Bitcoin.

These factors make it difficult to accurately predict the future market price of Bitcoin and may also inhibit consumer trust in and market acceptance of cryptocurrencies as a means of exchange, which could limit the future adoption of Bitcoin and, as a result, our assumptions could prove incorrect. If our assumptions prove incorrect and the future price of Bitcoin is not sufficiently high, our income from our Bitcoin mining operations may not exceed our costs, and our operations may never achieve profitability.

Bitcoin is subject to halving, and our mining operations may generate less revenue as a result.

As disclosed in Part I, Item 1, “Business” of this Annual Report, under the subheading “Halving”, the number of new Bitcoin awarded for solving a block is cut in half – hence, “halving” – at mathematically predetermined intervals. While Bitcoin prices have historically increased around these halving events, there is no guarantee that the price change will be favorable or would compensate for the reduction in mining rewards. If a corresponding and proportionate increase in the price of the Bitcoin does not follow future halving events, the revenue we earn from our Mining operations would see a decrease, which could have a material adverse effect on our results of operations and financial condition.

Transaction fees may decrease demand for Bitcoin and prevent expansion.

As the number of Bitcoins currency rewards awarded for solving a block in a blockchain has decreased, transaction fees have increasingly been used to incentivize miners to continue to contribute to the Bitcoin network. However, high Bitcoin transaction fees may slow the adoption of Bitcoin as a means of payment, which may decrease demand for Bitcoin and future prices of Bitcoin may suffer as a result. If Bitcoin prices are not sufficiently high, our Mining revenue may not exceed our associated costs, and our results of operations and financial condition may suffer. Further, because the price of shares of our common stock may be linked to the price of Bitcoin, if demand for Bitcoin decreases, causing future Bitcoin prices to decrease, the market price of our securities may be materially and adversely affected, limiting our ability to raise additional capital to fund our strategic growth plans.

Cryptocurrencies face significant scaling obstacles that can lead to high fees or slow transaction settlement times.

Cryptocurrencies face significant scaling obstacles that can lead to high fees or slow transaction settlement times, and attempts to increase the volume of transactions may not be effective. Scaling cryptocurrencies is essential to the widespread acceptance of cryptocurrencies as a means of payment, including Bitcoin. Many cryptocurrency networks face significant scaling challenges. For example, cryptocurrencies are limited with respect to how many transactions can occur per second. Participants in the cryptocurrency ecosystem debate potential approaches to increasing the average number of transactions per second that the network can handle and have implemented mechanisms or are researching ways to increase scale, such as increasing the allowable sizes of blocks, and therefore the number of transactions per block, and sharding (a horizontal partitioning of data in a database or search engine), which would not require every single transaction to be included in every single miner's or validator's block. However, there is no guarantee that any of the mechanisms in place or being explored for increasing the scale of settlement of cryptocurrency transactions will be effective.

If adoption of Bitcoin (and cryptocurrencies, generally) as a means of payment does not occur on the schedule or scale we anticipate, the demand for Bitcoin may stagnate or decrease, which could adversely affect future Bitcoin prices, and our results of operations and financial condition, which could have a material adverse effect on the market price for our securities.

Risks Related to our Operations

To remain competitive in our industry, we seek to grow our hash rate to match the growing network hash rate and increasing network difficulty of the Bitcoin blockchain, and if we are unable to grow our hash rate at pace with the network hash rate, our chance of earning Bitcoin from our Mining operations would decline.

As the adoption of Bitcoin has increased, the price of Bitcoin has generally appreciated, causing the demand for new Bitcoin rewards for successfully solving blocks on the Bitcoin blockchain to likewise increase. This has encouraged more miners to attempt to mine Bitcoin, which increases the global network hash rate deployed in support of the Bitcoin blockchain.

Because a miner's relative chance of successfully solving a block and earning a new Bitcoin reward is generally a function of the ratio the miner's individual hash rate bears to the global network hash rate, as the global network hash rate increases, a miner must increase its individual hash rate to maintain its chances of earning new Bitcoin rewards. Therefore, as new miners enter the industry and as miners deploy greater and greater numbers of more and more powerful machines, existing miners must seek to continually increase their hash rate to remain competitive. Thus, a feedback loop is created: as Bitcoin gains popularity and its relative market price increases, more miners attempt to mine Bitcoin and the Bitcoin network hash rate is increased; in response, existing miners and new miners devote more and more hash rate to the Bitcoin blockchain by deploying greater numbers of increasingly powerful machines to attempt to ensure their ability to earn additional Bitcoin rewards does not decrease. Compounding this feedback loop, the network difficulty of the Bitcoin network (i.e., the amount of work (measured in hashes) necessary to solve a block) is periodically adjusted to maintain the pace of new block additions (with one new block added to the blockchain approximately every ten minutes), and thereby control the supply of Bitcoin. As miners deploy more hash rate and the Bitcoin network hash rate is increased, the Bitcoin network difficulty is adjusted upwards by requiring more hash rate to be deployed to solve a block. Thus, miners are further incentivized to grow their hash rate to maintain their chance of earning new Bitcoin rewards. In theory, these dual processes should continually replicate themselves until the supply of available Bitcoin is exhausted. In response, miners have attempted to achieve greater hash rate by deploying increasingly sophisticated miners and expensive miners in ever greater quantities. This has become the Bitcoin mining industry's great "arms race." Moreover, because there are very few manufacturers of miners capable of producing a sufficient number of miners of adequate quality to meet this need, scarcity results, leading to higher prices. Compounding this phenomenon, it has been observed that some manufacturers of Bitcoin miners may increase the prices for new miners as the market price of Bitcoin increases.

Accordingly, to maintain our chances of earning new Bitcoin rewards and remaining competitive in our industry, we must seek to continually add new miners to grow our hash rate at pace with the growth in the Bitcoin network hash rate. However, as demand has increased and scarcity in the supply of new miners has resulted, the price of new miners has increased sharply, and we expect this process to continue in the future as demand for Bitcoin increases. Therefore, if the price of Bitcoin is not sufficiently high to allow us to fund our hash rate growth through new miner acquisitions and if we are otherwise unable to access additional capital to acquire these miners, our hash rate may stagnate and we may fall behind our competitors. If this happens, our chances of earning new Bitcoin rewards would decline and, as such, our results of operations and financial condition may suffer.

Because our miners are designed specifically to mine Bitcoin and may not be readily adaptable to mining other cryptocurrencies, a sustained decline in Bitcoin's value could adversely affect our business and results of operations.

We have invested substantial capital in acquiring miners using ASIC chips designed specifically to mine Bitcoin and other cryptocurrencies using the SHA-256 algorithm as efficiently and as rapidly as possible on our assumption that we will be able to use them to mine Bitcoin and generate revenue from our operations. Therefore, our Mining operations focus exclusively on mining Bitcoin, and our Mining revenue is based on the value of Bitcoin we mine. Accordingly, if the value of Bitcoin declines and fails to recover, for example, because of the development and acceptance of competing blockchain platforms or technologies, including competing cryptocurrencies which our miners may not be able to mine, the revenue we generate from our mining operations will likewise decline. Moreover, because our miners use these highly specialized ASIC chips, we may not be able to successfully repurpose them in a timely manner, if at all, if we decide to switch to mining a different cryptocurrency (or to another purpose altogether) following a sustained decline in Bitcoin's value or if Bitcoin is replaced by another cryptocurrency not using the SHA-256 algorithm. This would result in a material adverse effect on our business and could potentially impact our ability to continue as a going concern.

Our reliance primarily on a single model of miner may subject our operations to increased risk of design flaws.

The performance and reliability of our miners and our technology is critical to our reputation and our operations. Because we currently only use Bitmain Antminer type miners, if there are issues with those machines, such as a design flaw in the ASIC chips they employ, our entire system could be affected. Further, we have encountered, and may in the future encounter, software and firmware complications associated with adapting our miners to operate in our immersion-cooled Bitcoin mining hardware, which may delay or otherwise limit the benefits we anticipate from our adoption of immersion-cooled Mining. Any system error or failure may significantly delay response times or even cause our system to fail. Any disruption in our ability to continue mining could result in lower yields and harm our reputation and business. Any exploitable weakness, flaw, or error common to Bitmain miners could affect all our miners; therefore, if a defect or other flaw exists and is exploited, our entire miner fleet could be adversely impacted. Any interruption, delay or system failure could result in financial losses, a decrease in the trading price of our common stock and damage to our reputation.

Our use of third-party mining pools exposes us to additional risks.

We receive Bitcoin rewards from our mining activity through third-party mining pool operators. Mining pools allow miners to combine their processing power, increasing their chances of solving a block and getting paid by the network. The rewards are distributed by the pool operator, proportionally to our contribution to the pool's overall mining power, used to solve a block on the Bitcoin blockchain. Should the pool operator's system suffer downtime due to a cyber-attack, software malfunction or other issue, it will negatively impact our ability to mine and receive revenue. Furthermore, we are dependent on the accuracy of the mining pool operator's record keeping to accurately record the total processing power provided to the pool for a given Bitcoin mining application in order to assess the proportion of that total processing power we provided. While we have internal methods of tracking both the hash rate we provide and the total used by the pool, the mining pool operator uses its own record-keeping to determine our proportion of a given reward, which may not match our own. If we are unable to consistently obtain accurate proportionate rewards from our mining pool operators, we may experience reduced reward for our efforts, which would have an adverse effect on our business and operations.

We may not be able to realize the benefits of forks.

The Bitcoin blockchain is subject to modification based on a consensus of the users on its network. When a significant minority of users on the network agree to a modification that is not compatible with the prior network protocol, a “fork” of the network results, with one prong running the pre-modified protocol and the other running the modified protocol. The effect of such a fork would be the existence of two “versions” of the blockchain running in parallel that are not interchangeable, which requires exchange-type transaction to convert between the two forks. Additionally, it may be unclear following a fork which of the two protocols represents the original and which is the new protocol. Different metrics adopted by industry participants to determine which is the original asset include: referring to the wishes of the core developers of a cryptocurrency; determining based on the blockchain with the greatest amount of hash rate contributed by miners or validators; or by reference to the “length” of blockchain (i.e., the time between the first transaction recorded in the blockchain’s distributed ledger, and the date of the most recent transaction). Accordingly, we may not be able to realize the economic benefit of a fork, either immediately or ever, which could adversely affect an investment in our securities.

Cyber-attacks, data breaches or malware may disrupt our operations and trigger significant liability for us, which could harm our operating results and financial condition, and damage our reputation or otherwise materially harm our business.

As a publicly traded company, we experience cyber-attacks and other attempts to gain unauthorized access to our systems on a regular basis, and we anticipate continuing to be subject to such attempts. There is a risk that some or all of our cryptocurrencies could be lost or stolen as a result of one or more of these incursions. As we increase in size, we may become a more appealing target of hackers, malware, cyber-attacks or other security threats, and, despite our implementation of strict security measures and frequent security audits, it is impossible to eliminate all such vulnerability. For instance, we may not be able to ensure the adequacy of the security measures employed by third parties, such as our service providers and Whinstone’s colocation customers. Efforts to limit the ability of malicious actors to disrupt the operations of the internet or undermine our own security efforts may be costly to implement and may not be successful. Such breaches, whether attributable to a vulnerability in our systems or otherwise, could result in claims of liability against us, damage our reputation and materially harm our business.

We have not to date experienced a material cyber-event; however, the occurrence of any such event in the future could subject us to liability to our customers, suppliers, business partners and others, give rise to legal and/or regulatory action, which could damage our reputation or otherwise materially harm our business, operating results, and financial condition.

Incorrect or fraudulent Bitcoin transactions may be irreversible and we could lose access to our Bitcoin.

Bitcoin transactions are not, from an administrative perspective, reversible without the consent and active participation of the recipient of the Bitcoin from the transaction. Because of the decentralized nature of the Bitcoin blockchain, once a transaction has been verified and recorded in a block that is added to the Bitcoin blockchain, an incorrect transfer of a Bitcoin or a theft thereof generally will not be reversible, and we may not have sufficient recourse to recover our losses from any such transfer or theft. It is possible that, through computer or human error, or through theft or criminal action, our cryptocurrency rewards could be transferred in incorrect amounts or to unauthorized third parties, or to uncontrolled accounts. Though recent high profile enforcement actions against individuals laundering stolen Bitcoin have demonstrated some means of bringing malicious actors to justice for their theft, the stolen Bitcoin is likely to remain unrecoverable. Furthermore, we must possess both the unique public and private keys to our digital wallets to gain access to our Bitcoin, and the loss of a private key required may be irreversible. Therefore, if we lose, or if a malicious actor successfully denies us access to our private keys, we may be permanently denied access to the Bitcoin held in the wallet corresponding to the lost, stolen or blocked keys. Though we have taken and continue to take reasonable steps to secure our private keys and to store our Bitcoin with institutional custodians, if we were to lose access to our private keys or otherwise experience data loss relating to our digital wallets, we could effectively lose access to and the ability to use our Bitcoin assets. Moreover, we may be unable to secure insurance policies for our Bitcoin assets at rates or on terms acceptable to us, if at all, and we may choose to self-insure. To the extent that we are unable to recover our losses from such action, error or theft, such events could have a material adverse effect on our business, results of operations and financial condition.

The Whinstone Facility may not be adaptable to new technologies.

The market for data centers is characterized by rapidly changing technology, evolving industry standards, frequent new product introductions, and changing customer demands. Changes in industry practice or in technology could also reduce demand for the physical hosting space and infrastructure that we provide or make previous improvements in the Whinstone Facility obsolete. Our ability to deliver technologically sophisticated infrastructure at the Whinstone Facility, including power and cooling, is a significant factor in our customers' decisions to collocate with us at the Whinstone Facility. The Whinstone Facility's infrastructure may become obsolete due to the development of new systems that deliver power to, or eliminate heat from, the miners or other customer equipment that we house, which may require us to expend significant capital resources to retrofit or otherwise upgrade our current systems to compete with data centers deploying these new systems.

While we believe the Whinstone Facility is primed to be adaptable, new technology can be, by its nature, unpredictable. Moreover, even if we are able to respond, we may not be able to efficiently upgrade or change these systems without incurring significant costs. Further, operations may be negatively impacted by these upgrades as they are in process. This may impact our customers' experience in the short term, which may have a negative impact on operating cash flows, liquidity, and financial condition.

The Whinstone Facility is subject to a ten-year ground lease, and if we are unable to renew its term, we may be unable to fully realize the anticipated benefits of our acquisition of Whinstone and the ongoing development of the site.

The Whinstone Facility is subject to a ground lease with an initial term of ten years, followed by three ten-year renewal periods, unless terminated earlier. The long-term success of our plans for the Whinstone Facility is largely based on our ability to maintain the lease in effect and to renew it going forward. If we fail to maintain the lease or renew it once its initial term expires and the landlord requires Whinstone to vacate the premises, we will likely incur significant costs in relocating Whinstone's operations, if we could do so at all, and our Mining and Hosting operations would be interrupted during such relocation. Further, if we fail to renew the lease on terms favorable to us, and our costs are increased, then we may not realize the anticipated benefits of our investment in the Whinstone Acquisition or any future development of its remaining available capacity. Any disruptions or changes to Whinstone's present relationship with the landlord for the Whinstone Facility could disrupt our business and our results of operations negatively.

Our business could be harmed by prolonged power and internet outages, shortages, or capacity constraints.

Our operations require a significant amount of electrical power and access to high-speed internet to be successful. If we are unable to secure sufficient electrical power, or if we lose internet access for a prolonged period, we may be required to reduce our operations or cease them altogether. If this occurs, our business and results of operations may be materially and adversely affected.

We are subject to risks associated with our need for significant electrical power.

Our operations have required significant amounts of electrical power, and, as we continue to expand our mining fleet and our Whinstone Facility, we anticipate our demand for electrical power will continue to grow. If we are unable to continue to obtain sufficient electrical power on a cost-effective basis, we may not realize the anticipated benefits of our significant capital investments.

Additionally, our operations could be materially adversely affected by prolonged power outages. Although our Whinstone Facility may be powered by backup generators on a temporary basis, it would not be feasible or cost-effective to run miners on back-up power generators for extended periods of time. Therefore, we may have to reduce or cease our operations in the event of an extended power outage, or as a result of the unavailability or increased cost of electrical power. If this were to occur, our business and results of operations could be materially and adversely affected.

Our operations could be adversely affected by events outside of our control, such as natural disasters.

We may be impacted by natural disasters, wars, health epidemics, weather conditions, the long-term effects of climate change, power outages or other events outside of our control. For example, we voluntarily halted operations at our Whinstone Facility during the severe winter storms in the first quarter of 2022 and 2021 that had a widespread impact on utilities and transportation. In the future, regulators or power providers may, under new or revised rules, require us to power down the Whinstone Facility during such events. If major disasters such as earthquakes, floods or other climate-related events occur, the Whinstone Facility or our other offices are severely damaged, or our information system or communications could break down or operate improperly, which may interrupt our operations. We may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition.

Increased scrutiny and changing expectations from stakeholders with respect to our ESG practices and the impacts of Climate Change may result in additional costs or risks.

Companies across many industries are facing increasing scrutiny related to their environmental, social, and governance (“ESG”) practices. Investor advocacy groups, certain institutional investors, investment funds and other influential investors are also increasingly focused on ESG practices and in recent years have placed increasing importance on the non-financial impacts of their investments. Furthermore, increased public awareness and concern regarding environmental risks, including global climate change, may result in increased public scrutiny of our business and our industry, and our management team may divert significant time and energy away from our operations and towards responding to such scrutiny and reassuring our employees.

In addition, the physical risks of climate change may impact the availability and cost of materials and natural resources, sources and supply of energy, demand for Bitcoin and other cryptocurrencies, and could increase our insurance and other operating costs, including, potentially, to repair damage incurred as a result of extreme weather events or to renovate or retrofit facilities to better withstand extreme weather events. If environmental laws or regulations or industry standards are either changed or adopted and impose significant operational restrictions and compliance requirements on our operations, or if our operations are disrupted due to physical impacts of climate change, our business, capital expenditures, results of operations, financial condition and competitive position could be negatively impacted.

Risks Related to Governmental Regulation and Enforcement

Changing environmental regulation and public energy policy may expose our business to new risks.

Our Bitcoin mining operations require a substantial amount of power and can only be successful, and ultimately profitable, if the costs we incur, including for electricity, are lower than the revenue we generate from our operations. As a result, any mine we establish can only be successful if we can obtain sufficient electrical power for that mine on a cost-effective basis, and our establishment of new mines requires us to find locations where that is the case. For instance, our plans and strategic initiatives for the Whinstone Facility are based, in part, on our understanding of current environmental and energy regulations, policies, and initiatives enacted by federal and Texas regulators. If new regulations are imposed, or if existing regulations are modified, the assumptions we made underlying our plans and strategic initiatives may be inaccurate, and we may incur additional costs to adapt our planned business, if we are able to adapt at all, to such regulations.

In addition, there continues to be a lack of consistent climate legislation, which creates economic and regulatory uncertainty for our business because the cryptocurrency mining industry, with its high energy demand, may become a target for future environmental and energy regulation. New legislation and increased regulation regarding climate change could impose significant costs on us and our suppliers, including costs related to increased energy requirements, capital equipment, environmental monitoring and reporting, and other costs to comply with such regulations. Further, any future climate change regulations could also negatively impact our ability to compete with companies situated in areas not subject to such limitations. For example, legislation proposed in the state of New York, if passed, could restrict the ability of electricity suppliers to provide electricity to cryptocurrency mining operations in times of electricity shortage, or at all.

Given the political significance and uncertainty around the impact of climate change and how it should be addressed, we cannot predict how legislation and regulation will affect our financial condition and results of operations. Further, even without such regulation, increased awareness and any adverse publicity in the global marketplace about potential impacts on climate change by us or other companies in our industry could harm our reputation. Any of the foregoing could result in a material adverse effect on our business and financial condition.

The compliance costs of responding to new and changing regulation could adversely affect our operations at our Whinstone Facility.

We (along with those from whom we purchase electricity) are subject to various federal, state, local, and international environmental laws and regulations, including those relating to the generation, storage, handling, and disposal of hazardous substances and wastes. Certain of these laws and regulations also impose joint and several liability, without regard to fault, for investigation and cleanup costs on current and former owners and operators of real property and persons who have disposed of or released hazardous substances into the environment. Our operations may involve the use of hazardous substances and materials, such as petroleum fuel for emergency generators, as well as batteries, cleaning solutions, and other materials.

Electricity costs could also be affected due to existing or new regulations on greenhouse gas emissions, whether such regulations apply to all consumers of electricity or just to specified uses, such as Bitcoin mining. These regulations may be federal, or we may be newly exposed to such regulations due to the acquisition of Texas-based Whinstone. There has been interest in the U.S. Congress and in the Legislature of the State of Texas in addressing climate change, including through regulation of Bitcoin mining. Past legislative proposals to address climate change include measures ranging from taxes on carbon use or generation to federally imposed limits on greenhouse gas emissions. Further, although Texas has historically sought to maintain some degree of energy independence from the United States as a whole, it is unclear how future legislation and regulation will affect the Whinstone Facility. The course of future legislation and regulation in the United States and in Texas remains difficult to predict, and potential increased costs associated with new legislation or regulation cannot be estimated at this time.

Regulatory changes or actions may alter the nature of an investment in us or restrict the use of cryptocurrencies in a manner that adversely affects our business, prospects, or operations.

As cryptocurrencies have grown in both popularity and market size, governments around the world have reacted differently to cryptocurrencies; certain governments have deemed them illegal, and others have allowed their use and trade without restriction, while in some jurisdictions, such as in the U.S., subject the mining, ownership and exchange of cryptocurrencies to extensive, and in some cases overlapping, unclear and evolving regulatory requirements. Ongoing and future regulatory actions could have a material adverse effect on our business, prospects or operations.

Our interactions with a blockchain may expose us to SDN or blocked persons and new legislation or regulation could adversely impact our business or the market for cryptocurrencies.

The Office of Financial Assets Control (“OFAC”) of the U.S. Department of Treasury requires us to comply with its sanction program and not conduct business with persons named on its specially designated nationals (“SDN”) list. However, because of the pseudonymous nature of blockchain transactions we may inadvertently and without our knowledge engage in transactions with persons named on OFAC’s SDN list. Our Company’s policy prohibits any transactions with such SDN individuals, but we may not be adequately capable of determining the ultimate identity of the individual with whom we transact with respect to selling cryptocurrency assets. Moreover, the use of cryptocurrencies, including Bitcoin, as a potential means of avoiding federally-imposed sanctions, such as those imposed in connection with the Russian invasion of Ukraine. For example, on March 2, 2022, a group of United States Senators sent the Secretary of the United States Treasury Department a letter asking Secretary Yellen to investigate its ability to enforce such sanctions vis-à-vis Bitcoin, and on March 8, 2022, President Biden announced an executive order on cryptocurrencies which seeks to establish a unified federal regulatory regime for cryptocurrencies. We are unable to predict the nature or extent of new and proposed legislation and regulation affecting the cryptocurrency industry, or the potential impact of the use of cryptocurrencies by SDN or other blocked or sanctioned persons, which could have material adverse effects on our business and our industry more broadly. Further, we may be subject to investigation, administrative or court proceedings, and civil or criminal monetary fines and penalties as a result of any regulatory enforcement actions, all of which could harm our reputation and affect the value of our common stock.

Bitcoin and Bitcoin mining, as well as cryptocurrencies generally, may be made illegal in certain jurisdictions, including the ones we operate in, which could adversely affect our business prospects and operations.

Although we do not anticipate any material adverse regulations on Bitcoin mining in our jurisdictions of operation, it is possible that state or federal regulators may seek to impose harsh restrictions or total bans on cryptocurrency mining which may make it impossible for us to do business without relocating our mining operations, which could be very costly and time consuming. Further, although Bitcoin and Bitcoin mining, as well as cryptocurrencies generally, are largely unregulated in most countries (including the United States), regulators in certain jurisdictions may undertake new or intensify existing regulatory actions in the future that could severely restrict the right to mine, acquire, own, hold, sell, or use cryptocurrency or to exchange it for traditional fiat currency such as the United States Dollar. Such restrictions may adversely affect us as the large-scale use of cryptocurrencies as a means of exchange is presently confined to certain regions globally. Such circumstances could have a material adverse effect on us, which could have a material adverse effect on our business, prospects or operations and potentially the value of any Bitcoin or other cryptocurrencies we mine or otherwise acquire or hold for our own account, and thus harm investors.

Risks Related to Ownership of Our Common Stock

The trading price of shares of our common stock has been subject to volatility.

The trading price of our common stock has been, and is likely to continue to be, volatile, and may be influenced by including the risks, uncertainties and factors described in this Annual Report and our other filings with the SEC, as well as factors beyond our control or of which we may be unaware. If these risks come to pass and our business and results of operation suffer as a result, the market price of our securities may decline, which could have a material adverse effect on an investment in our securities.

We have a classified board of directors; therefore, only one-third of the Board is up for election at each annual shareholders' meeting, which could limit shareholders' ability to influence directors' decision making.

Our Bylaws provide for a classified board of directors consisting of three classes of directors serving staggered three-year terms, and each year our stockholders elect one class of our directors. We believe that a classified board structure facilitates continuity and stability of leadership and policy by helping ensure that, at any given time, a majority of our directors have prior experience as directors of our Company and are familiar with our business and operations. In our view, this permits more effective long-term planning and helps create long-term value for our stockholders. The classified board structure, however, could prevent a party who acquires control of a majority of our outstanding voting stock from obtaining control of our board of directors until the second annual stockholders' meeting following the date that party obtains control of a majority of our voting stock. The classified board structure may discourage a third party from initiating a proxy contest, making a tender offer or otherwise attempting to obtain control of us, as the structure makes it more difficult for a stockholder to replace a majority of our directors.

Article XIV of our Bylaws, as amended, designates the courts of the State of New York as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our shareholders, and therefore may limit our shareholders' ability to choose a forum for disputes with us or our directors, officers, employees, or agents.

Article XIV of our Bylaws, as amended, provides that, to the fullest extent permitted by law, and unless we consent to the selection of an alternative forum, the state and federal courts in and for the State of New York shall be the sole and exclusive forum for the resolution of certain actions and proceedings that may be initiated by our stockholders, and that, by purchasing our securities, our stockholders are deemed to have notice of and consented to this forum selection clause. Under Article XIV of our Bylaws, the following claims are subject to this forum selection clause: (a) any derivative action or proceeding brought on behalf of the Company; (b) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any director or officer of the Company to the Company or the Company's stockholders; (c) any action or proceeding asserting a claim against the Company arising pursuant to any provision of the Nevada Revised Statutes or the Company's Articles of Incorporation or Bylaws (as either might be amended from time to time); or (d) any action or proceeding asserting a claim against the Company governed by the internal affairs doctrine.

By its terms, the forum selection clause in our Bylaws applies to the foregoing claims to the fullest extent permitted by law, and, as such, should not be interpreted as precluding our stockholders from bringing claims under the Exchange Act in the appropriate federal court with jurisdiction over such claims, as provided by Section 27 of the Exchange Act. Likewise, the forum selection clause in our Bylaws should not be interpreted as precluding our stockholders from bringing claims under the Securities Act in the appropriate state or federal court with jurisdiction over such claims, as provided by Section 22 of the Securities Act.

We believe the choice-of-forum provision in our Bylaws will help provide for the orderly, efficient, and cost-effective resolution of legal issues affecting us by designating courts located in the State of New York as the exclusive forum for cases involving such issues. However, this provision may limit a stockholder's ability to bring a claim in a judicial forum that it believes to be favorable for disputes with us or our directors, officers, employees, or agents, which may discourage such actions against us and our directors, officers, employees, and agents.

Nevada revised statutes permit us to make this selection in our Bylaws, and, while there is no New York case law addressing the enforceability of this type of provision, New York courts have on prior occasion found persuasive authority in Delaware case law in favor of the enforceability of forum selection clauses in the absence of statutory or case law specifically addressing an issue of corporate law. However, if a court were to find the choice-of-forum provision in our Bylaws inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition, or results of operations.

Nevada law contains provisions that could discourage, delay or prevent a change in control of our company, prevent attempts to replace or remove current management and reduce the market price of our stock.

Certain provisions of Nevada law described below may make us a less attractive candidate for acquisition, which may adversely impact the value of the shares of our capital stock held by our stockholders. We have not opted out of these provisions in our Bylaws, as permitted under the Nevada Revised Statutes.

Nevada Revised Statutes Sections 78.411 through 78.444 (the "Nevada Combinations Statute") generally prohibit "combinations" including mergers, consolidations, sales and leases of assets, issuances of securities and similar transactions by a Nevada corporation having a requisite number of stockholders of record (of which we are one) with any person who beneficially owns (or any affiliate or associate of the corporation who within the previous two years owned), directly or indirectly, 10% or more of the voting power of the outstanding voting shares of the corporation (an "interested stockholder"), within two years after such person first became an interested stockholder unless (i) the board of directors of the corporation approved the combination or transaction by which the person first became an interested stockholder before the person first became an interested stockholder or (ii) the board of directors of the corporation has approved the combination in question and, at or after that time, such combination is approved at an annual or special meeting of the stockholders of the target corporation, and not by written consent, by the affirmative vote of holders of stock representing at least 60% of the outstanding voting power of the target corporation not beneficially owned by the interested stockholder or the affiliates or associates of the interested stockholder.

Two years after the date the person first became an interested stockholder, the Nevada Combinations Statute prohibits any combination with that interested stockholder unless (i) the board of directors of the corporation approved the combination or transaction by which the person first became an interested stockholder before the person first became an interested stockholder or (ii) such combination is approved by a majority of the outstanding voting power of the corporation not beneficially owned by the interested stockholder or any affiliate or associate of the interested stockholder. The Nevada Combinations Statute does not apply to combinations with an interested stockholder after the expiration of four years from when the person first became an interested stockholder.

Because we do not currently intend to pay any cash dividends on our common stock, our stockholders will not be able to receive a return on their shares unless they sell them.

We currently intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. Unless we pay dividends, our stockholders will not be able to receive a return on their shares unless they sell them. There is no assurance that stockholders will be able to sell shares when desired.

We, and some of our current officers and directors, have been named as parties to various lawsuits arising out of, or related to, allegedly false and misleading statements made in prior securities filings, and those lawsuits could adversely affect us, require significant management time and attention, result in significant legal expenses or damages, and cause our business, financial condition, results of operations and cash flows to suffer.

A number of securities class action complaints and a stockholder derivative action have been filed against us and certain of our current officers and directors, as described more fully in Item 3, “Legal Proceedings”. Stockholders have filed three class action complaints against us in three states, accusing us of violations of the federal securities laws based on purported material misrepresentations or omissions allegedly made by the Company. Each class action complaint seeks unspecified money damages and other relief on behalf of a putative class of persons who purchased or otherwise acquired our common stock between November 13, 2017 and February 15, 2018. The stockholder derivative case alleges similar disclosure violations and seeks unspecified monetary damages and corporate governance reforms. If these matters cannot be resolved expeditiously, management’s attention may be diverted to this matter and there can be no assurance that the litigation would be settled. If the current litigation proceeds or if additional claims are filed, the legal and other costs associated with the defense of these actions and their ultimate outcomes could have a material adverse effect on our business, financial condition and results of operations. While we expect insurance to cover many of the costs associated with defending such litigation, including claims for indemnification made by our existing and former management team and members of our Board of Directors, insurance coverage may be insufficient and could require a diversion of our resources. There also may be adverse publicity associated with litigation that could negatively affect customer perception of our business, regardless of whether the allegations are valid or whether we are ultimately found liable.

Because there has been limited precedent set for financial accounting of Bitcoin and other cryptocurrency assets, the determination that we have made for how to account for cryptocurrency assets transactions may be subject to change.

Because there has been limited precedent set for the financial accounting of cryptocurrencies and related revenue recognition and no official guidance has yet been provided by the FASB or the SEC, it is unclear how companies may in the future be required to account for cryptocurrency transactions and assets and related revenue recognition. A change in regulatory or financial accounting standards could result in the necessity to change our accounting methods and restate our financial statements. Such a restatement could adversely affect the accounting for our newly mined cryptocurrency rewards and more generally negatively impact our business, prospects, financial condition and results of operations. Such circumstances would have a material adverse effect on our ability to continue as a going concern or to pursue our new strategy at all, which would have a material adverse effect on our business, prospects or operations as well as and potentially the value of any cryptocurrencies we hold or expects to acquire for our own account and harm investors.

We have identified material weaknesses in our internal control over financial reporting and may identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, which may result in material misstatements of our financial statements or cause us to fail to meet our periodic reporting obligations.

We are required to comply with certain provisions of Section 404 of the Sarbanes-Oxley Act of 2002 (“Sarbanes-Oxley Act”). Section 404 requires that we document and test our internal control over financial reporting and issue management’s assessment of our internal control over financial reporting. Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2021. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control — Integrated Framework. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Based on our assessment, as of December 31, 2021, we concluded that our internal control over financial reporting contained material weaknesses. To remediate these material weaknesses, our management has been implementing and continues to implement measures designed to ensure that control deficiencies contributing to the material weakness are remediated, such that these controls are designed, implemented, and operating effectively.

We believe that these actions will remediate the material weakness. However, the remediation cannot be deemed successful until the applicable controls operate for a sufficient period of time and our management has concluded, through testing, that these controls are operating effectively. If we fail to comply with the requirements of Section 404 of the Sarbanes-Oxley Act, the accuracy and timeliness of the filing of our annual and quarterly reports may be materially adversely affected and could cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock. In addition, a material weakness in the effectiveness of our internal control over financial reporting could result in an increased chance of fraud and the loss of customers, reduce our ability to obtain financing and require additional expenditures to comply with these requirements, each of which could have a material adverse effect on our business, results of operations and financial condition.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Leases

As of December 31, 2021, we leased all of our locations, including our corporate offices in Castle Rock, Colorado, Austin, Texas and Costa Mesa, California, ESS Metron's corporate offices and manufacturing facilities in Denver, Colorado, and our Whinstone Facility in Rockdale, Texas, which is subject to a long-term ground lease. At December 31, 2020, we did not have any significant operating lease balances.

See Note 11, "Leases" to the notes to our Consolidated Financial Statements in Part II, Item 8. "Financial Statements and Supplementary Data" beginning on page 53 of this Annual Report for further discussion of our accounting policies relating to our leased premises.

Management believes its leased facilities are adequate for the Company's near-term needs.

ITEM 3. LEGAL PROCEEDINGS.

We, and our subsidiaries, are subject at times to various claims, lawsuits and governmental proceedings relating to our business and transactions arising in the ordinary course of business. We cannot predict the final outcome of such proceedings. Where appropriate, we vigorously defend such claims, lawsuits and proceedings. Some of these claims, lawsuits and proceedings seek damages, including, consequential, exemplary or punitive damages, in amounts that could, if awarded, be significant. Certain of the claims, lawsuits and proceedings arising in ordinary course of business are covered by our insurance program. We maintain property, and various types of liability insurance in an effort to protect ourselves from such claims. In terms of any matters where there is no insurance coverage available to us, or where coverage is available and we maintain a retention or deductible associated with such insurance, we may establish an accrual for such loss, retention or deductible based on current available information. In accordance with accounting guidance, if it is probable that an asset has been impaired or a liability has been incurred as of the date of the financial statements, and the amount of loss is reasonably estimable, then an accrual for the cost to resolve or settle these claims is recorded by us in the accompanying consolidated balance sheets. If it is reasonably possible that an asset may be impaired as of the date of the financial statement, then we disclose the range of possible loss. Paid expenses related to the defense of such claims are recorded by us as incurred and paid and included CECL. Management, with the assistance of outside counsel, may from time to time adjust such accruals according to new developments in the matter, court rulings, or changes in the strategy affecting our defense of such matters. On the basis of current information, we do not believe there is a reasonable possibility that, other than with regard to the Class Action described below, any material loss, if any, will result from any claims, lawsuits and proceedings to which we are subject to either individually, or in the aggregate.

Class Actions and Related Claims

On February 17, 2018, Creighton Takata filed an action asserting putative class action claims on behalf of the Company's stockholders in the United District Court for the District of New Jersey, *Takata v. Riot Blockchain Inc., et al.*, Case No. 3: 18-cv-02293. The complaint asserts violations of federal securities laws under Section 10(b) and Section 20(a) of the Securities Exchange Act of 1934 on behalf of a putative class of stockholders that purchased stock from November 13, 2017 through February 15, 2018. The complaint alleges that the Company and certain of its officers and directors made, caused to be made, or failed to correct false and/or misleading statements in press releases and public filings regarding its business plan in connection with its cryptocurrency business. The complaint requests damages in unspecified amounts, costs and fees of bringing the action, and other unspecified relief.

On April 18, 2018, Joseph J. Klapper, Jr., filed a complaint against Riot Blockchain, Inc., and certain of its officers and directors in the United District Court for the District of New Jersey (*Klapper v. Riot Blockchain Inc., et al.*, Case No. 3: 18-cv-8031). The complaint contained substantially similar allegations and the same claims as those filed by Mr. Takata, and requests damages in unspecified amounts, costs and fees of bringing the action, and other unspecified relief. On November 6, 2018, the court in the *Takata* action issued an order consolidating *Takata* with *Klapper* into a single putative class action. The court also appointed Dr. Golovac as Lead Plaintiff and Motely Rice as Lead Counsel of the consolidated class action.

Lead Plaintiff filed a consolidated complaint on January 15, 2019. Defendants filed motions to dismiss on March 18, 2019. In lieu of opposing defendants' motions to dismiss, Lead Plaintiff filed another amended complaint on May 9, 2019. Defendants filed multiple motions to dismiss the amended complaint starting on September 3, 2019.

On April 30, 2020, the court granted the motions to dismiss, which resulted in the dismissal of all claims without prejudice. On December 24, 2020, Lead Plaintiff filed another amended complaint. Defendants filed multiple motions to dismiss the amended complaint starting on February 8, 2021, which were fully briefed. On February 28, 2022, the court issued an order instructing the parties to submit supplemental briefing by March 14, 2022 on particular issues raised in the motions to dismiss. Because this litigation is still at this early stage, we cannot reasonably estimate the likelihood of an unfavorable outcome or the magnitude of such an outcome, if any.

Shareholder Derivative Cases

On April 5, 2018, Michael Jackson filed a shareholder derivative complaint on behalf of the Company in the Supreme Court of the State of New York, County of Nassau, against certain of the Company's officers and directors, as well as against an investor (*Jackson v. Riot Blockchain, Inc., et al.*, Case No. 604520/18). The complaint contains similar allegations to those contained in the shareholder class action complaints and seeks recovery for alleged breaches of fiduciary duty, unjust enrichment, waste of corporate assets, abuse of control and gross mismanagement. The complaint seeks unspecified monetary damages and corporate governance changes. At the last preliminary conference, the court adjourned the conference until August 10, 2021 in lieu of staying the action. Defendants do not anticipate any other activity on this case until the next preliminary conference.

On May 22, 2018, two additional shareholder derivative complaints were filed on behalf of the Company in the Eighth Judicial District Court of the State of Nevada in and for the County of Clark (*Kish v. O'Rourke, et al.*, Case No. A-18-774890-B & *Gaft v. O'Rourke, et al.*, Case No. A-18-774896-8). The two complaints make identical allegations, which are similar to the allegations contained in the shareholder class action complaints. The shareholder derivative plaintiffs also seek recovery for alleged breaches of fiduciary duty, unjust enrichment, waste of corporate assets, and aiding abetting a breach of fiduciary duty. The complaints seek unspecified monetary damages and corporate governance changes.

On September 24, 2018, the court entered an order consolidating the *Gaft* and *Kish* actions, which is now styled as *In re Riot Blockchain, Inc. Shareholder Derivative Litigation*, Case No. A-18-774890-B. The plaintiffs filed a consolidated complaint on March 15, 2019. The consolidated action has been temporarily stayed until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

On October 9, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Eastern District of New York (*Rotkowitz v. O'Rourke, et al.*, Case No. 2:18-cv-05632). As with the other shareholder derivative actions, the shareholder plaintiff alleges breach of fiduciary duty, waste of corporate assets, and unjust enrichment against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. The parties filed a motion with the court to temporarily stay this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey. In response, the court dismissed the action without prejudice with leave to refile a complaint following the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

On October 22, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Southern District of New York (*Finitz v. O'Rourke, et al.*, Case No. 1:18-cv-09640). The shareholder plaintiffs allege breach of fiduciary duty, waste of corporate assets, and unjust enrichment against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. Upon the parties' stipulation, the court issued an order temporarily staying this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

On December 13, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Northern District of New York (*Monts v. O'Rourke, et al.*, Case No. 1:18-cv-01443). The shareholder plaintiffs allege claims for violation of Section 14(a) of the Securities Exchange Act of 1934, breach of fiduciary duties, unjust enrichment, waste of corporate assets, and aiding and abetting against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. Upon the parties' stipulation, the court issued an order temporarily staying this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

Defendants intend to vigorously contest plaintiffs' allegations in the shareholder derivative actions and plaintiffs' right to bring the action in the name of Riot Blockchain. But because this litigation is still at this early stage, we cannot reasonably estimate the likelihood of an unfavorable outcome or the magnitude of such an outcome, if any.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Market Information

Our common stock trades on the Nasdaq Capital Market under the symbol "RIOT".

Holders of our Common Stock

As of March 8, 2022, there were approximately 841 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

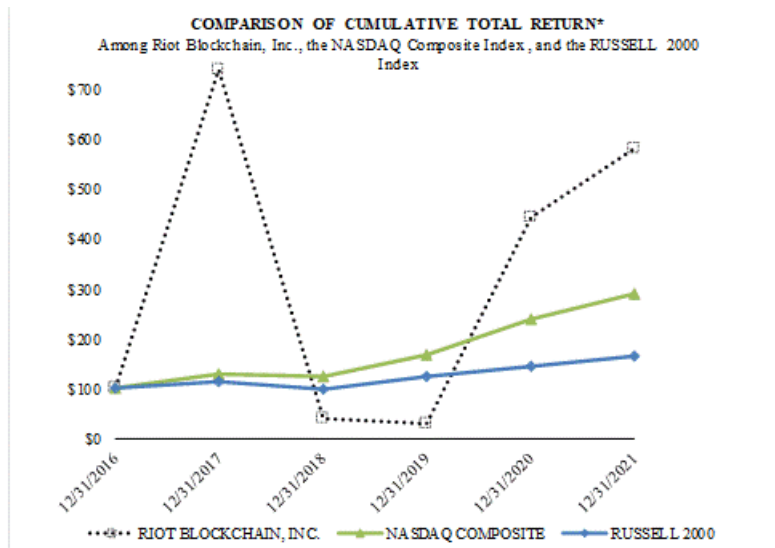
Dividend Policy

We have historically not declared or paid cash dividends on our capital stock. Any future determination regarding the declaration and payment of dividends, if any, will be at the discretion of our board of directors and will depend on then-existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects, and other factors our board of directors may deem relevant.

Stock Performance Graph

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or incorporated by reference into any filing of Riot Blockchain, Inc. under the Securities Act, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

The following graph shows a comparison, from January 1, 2017 through December 31, 2021, of the cumulative total return on our common stock, the Nasdaq Composite Index and the Russell 2000 Index. Due to the infancy of our industry, we have not compared our performance against a self-constructed peer group or used a Published Industry Index. Such returns are based on historical results and are not intended to suggest future performance. Data for the Nasdaq Composite Index and the Russell 2000 Index assumes an investment of \$100 on December 31, 2016 and reinvestment of dividends. We have historically not declared or paid cash dividends on our common stock.



* \$100 invested on December 31, 2016 in stock or index, including reinvestment of dividends, if any.

	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021
Riot Blockchain, Inc.	100.00	739.58	39.32	29.17	442.45	581.51
NASDAQ Composite	100.00	128.24	123.26	166.68	239.42	290.63
RUSSELL 2000	100.00	113.14	99.37	122.94	145.52	165.45

Recent Sales of Unregistered Securities

On December 1, 2021, we issued 715,413 shares of our common stock, subject to a holdback of 70,165 shares to the sellers in connection with the ESS Metron Acquisition. The shares of common stock in connection with the ESS Metron Acquisition were issued in reliance upon an exemption from registration provided by Section 4(a)(2) of the Securities Act. Subsequently, we registered for resale the 645,248 shares issued to the sellers at the closing of the ESS Metron Acquisition.

On May 26, 2021, at the closing of the Whinstone Acquisition, we issued 11.8 million shares of our common stock to Northern Data in exchange for all of the issued and outstanding equity interests of Whinstone. These shares were issued in reliance upon an exemption from registration provided by Section 4(a)(2) of the Securities Act. Subsequently, we registered the shares issued to Northern Data for resale pursuant to registration rights granted under the shareholders' agreement we entered into with Northern Data in connection with closing of the Whinstone Acquisition.

ITEM 6. [RESERVED]

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help the reader understand our results of operations and financial condition. The MD&A is provided as a supplement to, and should be read in conjunction with, our consolidated financial statements and notes thereto included in Item 8 - Financial Statements and Supplementary Data.

The MD&A generally discusses 2021 and 2020 items and year-to-year comparisons between 2021 and 2020, as well as year-to-year discussions between 2021, 2020, and 2019, where indicated. Discussions of 2019 items and year-to-year comparisons between 2020 and 2019 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2020, filed with the SEC on March 31, 2021.

Business Overview:

We are a vertically integrated Bitcoin mining and cryptocurrency infrastructure development company principally engaged in enhancing our capabilities to mine Bitcoin. We also provide the critical mining infrastructure for our institutional scale clients to mine Bitcoin at our Bitcoin mining facility (the "Whinstone Facility"). Our Whinstone Facility is believed to be the largest Bitcoin mining facility, as measured by developed capacity, in North America.

We operate in an environment which is consistently evolving based on the proliferation of Bitcoin and cryptocurrencies in general. A significant component of our strategy is to effectively and efficiently allocate capital between opportunities that generate the highest return on capital.

We operate in three business segments: (1) Bitcoin Mining ("Mining"), (2) Data Center Hosting ("Hosting"), and (3) Electrical Products and Engineering ("Engineering").

Strategic Acquisitions

Whinstone

On May 26, 2021, we completed the acquisition of all of the issued and outstanding equity interests in Whinstone US, Inc. ("Whinstone") pursuant to the stock purchase agreement, dated as of April 8, 2021, we entered into with Northern Data AG ("Northern Data") and Whinstone (the "Whinstone Acquisition"). At the closing of the Whinstone Acquisition, we paid to Northern Data \$80 million in cash, subject to customary adjustments set forth in the stock purchase agreement, and issued to Northern Data 11.8 million shares of our common stock. We also entered into a shareholder agreement with Northern Data on the closing date granting Northern Data certain registration rights whereby we registered the 11.8 million shares issued to Northern Data as part of the Whinstone Acquisition. Subsequent to December 31, 2021, there were no registration rights obligations to Northern Data.

After closing the Whinstone Acquisition, we announced a large-scale expansion of the Whinstone Facility by 400 MW, which is anticipated to bring the Whinstone Facility to 700 MW in total capacity of Bitcoin mining infrastructure. The expansion of the Whinstone Facility will provide us with the necessary infrastructure to operate our miners efficiently, and deploy our future miners, as well as provide additional expansion opportunities in our Hosting business.

ESS Metron

On December 1, 2021, we entered into a membership interest purchase agreement to acquire all of the issued and outstanding equity interests (the “ESS Metron Acquisition”) of Ferrie Franzmann Industries, LLC (d/b/a ESS Metron) (“ESS Metron”). At the closing of the ESS Metron Acquisition, we issued to the sellers \$25 million in cash, subject to customary adjustments set forth in the membership interest purchase agreement, and 715,413 shares of our common stock, subject to a holdback of 70,165 shares as security for the sellers’ indemnification obligations under the membership interest purchase agreement. We also granted the sellers certain registration rights relating to the resale by the sellers of the shares issued to them under the membership interest purchase agreement, among other things. Pursuant to these registration rights, we registered the resale of the 645,248 shares issued to the sellers at the closing of the ESS Metron Acquisition pursuant to the prospectus supplement we filed with the SEC on December 1, 2021 under our effective Registration Statement on Form S-3 filed with the SEC on August 31, 2021 (File No. 333-259212). These registration rights also apply to the 70,165 holdback shares withheld at closing of the ESS Metron Acquisition, subject to the satisfaction of the conditions to their release, as set forth in the membership interest purchase agreement. Accordingly, as provided in the membership interest purchase agreement, we will be obligated to register under the Securities Act the resale of the holdback shares that are ultimately issued to the sellers.

ESS Metron is one of the world’s leading designers and manufacturers of power distribution equipment. The acquisition of ESS Metron provides critical infrastructure electrical components and engineering expertise to facilitate the expansion of our Whinstone Facility, as well as future strategic growth initiatives we may undertake. ESS Metron has also been instrumental in the design, manufacture, and implementation of our industrial-scale immersion-cooled Bitcoin mining hardware at our Whinstone Facility.

2022 Trends

We anticipate that 2022 will be a year of consolidation in the Bitcoin mining industry, and we believe that, given our relative position in the competitive landscape, we are likely positioned to benefit from this consolidation. As a result of any strategic action undertaken by us, our business and financial results may change significantly. We are continuously evaluating strategic opportunities we may decide to undertake as part of our strategic growth initiatives; however, we can offer no assurances that any strategic opportunities we decide to undertake will be achieved on the schedule or within the budget we anticipate, if at all, in our competitive and evolving industry. See Part I, Item 1A. “Risk Factors” of this Annual Report for additional discussion regarding potential impacts our competitive and evolving industry may have on our business.

Bitcoin Mining

At December 31, 2021, our Mining business operated approximately 30,907 ASIC miners, with a hash rate capacity of 3.1 exahash per second (“EH/s”), utilizing approximately 96 megawatts (“MW”) of capacity. In 2021, we mined 3,812 Bitcoin, which represented an increase of 269% over the 1,033 Bitcoin we mined in 2020. Based on our existing operations and expected deliveries of miners pursuant to our purchase orders with their manufacturer, Bitmain, we anticipate we will have approximately 120,150 miners in operation, utilizing approximately 370 MW of capacity by the end of 2022.

Miner Purchases and Deployments

At December 31, 2021, we had purchased, received and/or deployed the following miners:

	Number of miners
Miners deployed at January 1, 2021	7,043
Miners received and deployed during the year ended December 31, 2021	23,864
Miners received during the year ended December 31, 2021, but not yet deployed	10,744
Miners under contract, but not yet received	78,495
	<hr/>
Total miners under contract, expected to be received, or deployed at December 31, 2022	120,146

During 2021, we received 34,608 additional Antminer model S19-Pro miners pursuant to purchase orders with their manufacturer, Bitmain, and, as of December 31, 2021, we had deployed a total of 30,907 miners in our Mining operation. Additionally, we executed six additional purchase orders with Bitmain to acquire 43,500 Antminer model S19j (90 Terahash per second) (“TH/s”) miners, and 9,000 Antminer model S19j-Pro (100 TH/s) miners, and 30,000 of Bitmain’s latest generation Antminer model S19XP (140 TH/s) miners, for a combined total purchase price of approximately \$535.0 million. Pursuant to these agreements, approximately \$301.3 million remains payable to Bitmain in installments in advance of shipment of the miners, which is scheduled to occur on a monthly basis through December 2022.

Data Center Hosting

Upon completion of the Whinstone Acquisition, we commenced an expansion of our Whinstone Facility to 700 MW, from its existing 300 MW of developed capacity. We expect the expanded Whinstone Facility to be completed during 2022, including the construction of four new dedicated Bitcoin mining buildings totaling approximately 240,000 square feet of finished hosting space. Upon completion, we anticipate our Whinstone Facility will possess sufficient developed electricity power capacity to support an estimated 112,000 Antminer model S19j miners based upon current configurations. We believe the expansion of our Whinstone Facility will provide sufficient capacity to enable us to deploy a significant quantity of our miners (including our current deployed fleet and those expected to be delivered in future shipments pursuant to our purchase orders with Bitmain) in a self-hosted facility, while allowing Whinstone to continue to operate and grow its existing Hosting business. We believe deploying our miners at the expanded Whinstone Facility has many advantages for our mining operations, including allowing us to operate our miners without incurring third-party colocation services fees and to do so at the fixed low energy costs available to the Whinstone Facility under its long-term power supply agreement. We also anticipate this expansion of the Whinstone Facility will provide space for third-party miner colocation services and for other enterprise-level data center hosting services.

Whinstone currently hosts Bitcoin mining operations for institutional-scale mining customers. In addition to Hosting revenue from customers, Whinstone also generates, as part of its Hosting revenue, construction services revenue from hosting customers on site, including revenue derived from the fabrication and deployment of immersion-cooling technology for Bitcoin mining.

From the May 26, 2021 acquisition date through December 31, 2021, Hosting revenue and net income was approximately \$24.5 million and \$1.2 million, respectively. Additionally, the majority of our \$22.6 million of deferred revenue as of December 31, 2021 is related to advance payments made by Whinstone customers, which will be primarily recognized over the remaining lives of the underlying contracts, or approximately eight years.

Electrical Products and Engineering

The Acquisition of ESS Metron provides us with the ability to vertically integrate many of the critical electrical components and engineering services necessary for our Whinstone expansion. A key component of our strategy is to integrate the expertise of the ESS Metron team, which we believe is necessary to reduce our execution and counter-party risk in ongoing and future expansion projects. ESS Metron’s engineers will also allow us to continue to explore new methods to optimize and develop a best-in-class Bitcoin mining operation, and they have been instrumental in the development of our industrial-scale immersion-cooled Bitcoin mining hardware. ESS Metron also has an existing electricity distribution product design, manufacture, and installation business primarily focused on large-scale commercial and governmental customers.

COVID-19

The COVID-19 global pandemic has been unpredictable and unprecedented and is likely to continue to result in significant national and global economic disruption, which may adversely affect our business. Based on our current assessment, however, we do not expect any material impact on our long-term development, our operations, or our liquidity due to the worldwide spread of COVID-19, other than the potential impacts of COVID-19 on global logistics discussed below. We are actively monitoring this situation and the possible effects on our financial condition, liquidity, operations, suppliers, and industry.

Global Logistics

Global supply logistics have caused delays across all channels of distribution. Similarly, we have also experienced delays in certain of our miner delivery schedules. During 2021, we have been able to effectively mitigate any delivery delays to avoid materially impacting our miner deployment schedule, however, there are no assurances we will be able to continue to mitigate any such delivery delays in 2022. Additionally, the scale of the Whinstone expansion requires large quantities of specific materials. We have procured and hold many of the required materials to help mitigate against global supply logistic and pricing concerns. We monitor developments in the global supply chain and how that may potentially impact our expansion plans. See Part I, Item 1A. “Risk Factors” of our Annual Report for additional discussion regarding potential impacts the global supply chain crisis may have on our operations and plans for expansion.

Summary of Mining Results

The following table presents additional information about our Mining activities, including cryptocurrency production and sales of the cryptocurrency the Company mined during the years ended December 31, 2021, 2020 and 2019 (\$ in thousands):

	Quantities (in coins)	Amounts
Balance at January 1, 2019	164	\$ 707
Revenue recognized from cryptocurrencies mined	944	6,741
Mining pool operating fees	—	(135)
Purchase of miner equipment with cryptocurrencies	(9)	(99)
Proceeds from sale of cryptocurrencies	(585)	(3,196)
Realized gain on sale/exchange of cryptocurrencies	—	665
Impairment of cryptocurrencies	—	(844)
Balance at December 31, 2019	514	3,839
Revenue recognized from cryptocurrencies mined	1,033	11,984
Mining pool operating fees	—	(146)
Proceeds from sale of cryptocurrencies	(500)	(8,298)
Realized gain on sale/exchange of cryptocurrencies	26	5,184
Impairment of cryptocurrencies	—	(989)
Cryptocurrencies received from sale of equipment	5	52
Balance at December 31, 2020	1,078	11,626
Revenue recognized from cryptocurrencies mined	3,812	184,422
Proceeds from sale of cryptocurrencies	(6)	(295)
Realized gain on sale/exchange of cryptocurrencies	—	253
Impairment of cryptocurrencies	—	(36,462)
Balance at December 31, 2021	4,884	\$ 159,544

Results of Operations Comparative Results for the Years Ended December 31, 2021 and 2020:

Revenues:

Total revenue for the years ended December 31, 2021 and 2020, was \$213.2 million and \$12.1 million, respectively, and consisted of our Mining revenue, Hosting revenue, Engineering revenue, and other revenue.

For the years ended December 31, 2021 and 2020, Mining revenue was \$184.4 million, and \$12.0 million, respectively. The increase of \$172.4 million in mining revenue was due to higher Bitcoin values in the 2021 period, averaging \$45,744 per coin as compared to \$11,461 per coin in the 2020 period, combined with a higher number of Bitcoin mined in 2021, which totaled 3,812, as compared to 1,033 in the 2020 period.

For the period from the acquisition of Whinstone on May 26, 2021 to December 31, 2021, Hosting revenue was \$24.5 million, and there was no Hosting revenue for the year ended December 31, 2020. Hosting revenue includes upfront payments, which we record as deferred revenue and generally recognize as services are provided. We provide energized space and operating and maintenance services to third-party mining companies who locate their mining hardware at our Whinstone Facility under long-term contracts. We account for these agreements as a single performance obligation for services being delivered in a series with delivery being measured by daily successful operation of the mining hardware. As such, we recognize revenue over the life of the contract as its series of performance obligations are met. The contracts are recognized in the amount for which we have the right to invoice because we elected the “right to invoice” practical expedient.

For the period from the acquisition of ESS Metron on December 1, 2021 to December 31, 2021, Engineering revenue was \$4.2 million, and there was no Engineering revenue for the year ended December 31, 2020. Engineering revenue is derived from the sale of custom products built to customers’ specifications under fixed-price contracts with one identified performance obligation. Engineering revenues are recognized over time as performance creates or enhances an asset with no alternative use, and for which the Company has an enforceable right to receive compensation as defined under the contract.

Other revenue consisting of license fees earned from our legacy animal bioscience business was not significant in either period.

Costs and expenses:

Cost of revenues for Mining for the years ended December 31, 2021 and 2020 was \$45.5 million and \$6.3 million, respectively, representing an increase of approximately \$39.2 million. As a percentage of Mining revenue, cost of revenues totaled 24.7% and 52.2% for each of the years ended December 31, 2021 and 2020, respectively. Cost of revenues consist primarily of direct production costs of mining operations, including electricity, labor, insurance and, in 2020, rent for the Oklahoma City facility and, in 2021, the variable Coinmint hosting fee, but excluding depreciation and amortization which are separately stated. The increase of \$39.2 million in cost of revenues is primarily due to the increases in variable mining costs, including the variable hosting fees associated with increases in mining revenues.

Cost of revenues for Hosting for the period from the acquisition of Whinstone on May 26, 2021 to December 31, 2021 was \$33.0 million and there were no Hosting costs for the year ended December 31, 2020. The 2021 costs consisted primarily of \$25.8 million for direct power costs, with the balance primarily incurred for compensation and rent costs.

Cost of revenues for Engineering for the period from the acquisition of ESS Metron on December 1, 2021 to December 31, 2021 was \$3.6 million and there were no Engineering costs for the year ended December 31, 2020. The 2021 costs consisted primarily of \$3.6 million for direct materials and labor, as well as indirect manufacturing costs.

Acquisition-related costs for the year ended December 31, 2021 totaled \$21.2 million and consisted of expenses incurred in connection with our acquisitions of Whinstone and ESS Metron. There were no acquisition-related costs for the year ended December 31, 2020.

Selling, general and administrative expenses during the years ended December 31, 2021 and 2020 totaled \$87.4 million and \$10.3 million, respectively. Selling, general and administrative expenses consist of stock-based compensation, legal and professional fees and other personnel and related costs. The increase of \$77.2 million is primarily due to an increase in stock-compensation expense of \$65.1 million resulting from additional awards (including the performance-based plan announced in August 2021), compensation expense, which increased by \$5.7 million due to additional employees to support the Company's growth, and an increase in consulting fees of \$2.6 million resulting primarily from assistance on internal control systems and procedures.

Depreciation and amortization expense during the year ended December 31, 2021 totaled \$26.3 million, which is an increase of approximately \$21.8 million, as compared to \$4.5 million for the year ended December 31, 2020. The increase is primarily due to higher depreciation expense recognized for the Whinstone Facility and our recently acquired miners.

Change in fair value of our derivative asset for the period from the acquisition of Whinstone to December 31, 2021, was \$18.6 million, including \$12.1 million recorded to adjust the fair value of our Power Supply Agreement, which was classified as a derivative asset and measured at fair value on the date of our acquisition of Whinstone, and \$6.5 million from power sales to ERCOT through its demand response programs. There were no derivative assets for the year ended December 31, 2020.

Impairment of long-term investments of \$9.4 million recognized during the year ended December 31, 2020 was recorded in connection with the impairment of our investment in Coinsquare Ltd., a Canadian cryptocurrency exchange ("Coinsquare").

Impairment of cryptocurrencies for the years ended December 31, 2021 and 2020 was \$36.5 million and \$1.0 million respectively, arising from the decline in Bitcoin prices during the periods.

Other Income:

Other income for the years ended December 31, 2021 and 2020 was \$14.7 million and \$1.5 million, respectively. The increase of \$13.2 million is primarily related to a \$26.3 million realized gain on the sale/exchange of long-term investment recognized in connection with the exchange of our shares of Coinsquare, partially offset by a \$13.7 million unrealized loss on the decline in fair value our marketable equity securities.

Income Taxes:

For the year ended December 31, 2021 the Company recorded an income tax expense of \$0.3 million. There was no income tax expense or benefit recorded for the year ended December 31, 2020.

Non-GAAP Measures

In addition to consolidated U.S. GAAP financial measures, we consistently evaluate our use and calculation of the non-GAAP financial measure, "Adjusted EBITDA." Adjusted EBITDA is a financial measure defined as our EBITDA, adjusted to eliminate the effects of certain non-cash and / or non-recurring items, that do not reflect our ongoing strategic business operations. EBITDA is computed as net income before interest, taxes, depreciation, and amortization. Adjusted EBITDA is EBITDA further adjusted, for certain income and expenses, management believes results in a performance measurement that represents a key indicator of the Company's core business operations of Bitcoin mining. The adjustments include fair value adjustments such as derivative power contract adjustments, equity securities value changes, and non-cash stock-based compensation expense, in addition to financing and legacy business income and expense items. In 2021, we included impairments of cryptocurrencies and gain or losses on sales of cryptocurrencies as part of our calculation of Adjusted EBITDA. Based upon recent SEC comments to another issuer, we have determined to exclude impairments of cryptocurrencies and gain or losses on sales of cryptocurrencies from our calculation of Adjusted EBITDA as of December 31, 2021. We will continue to evaluate the positions of FASB and SEC on the accounting treatment of cryptocurrencies.

We believe Adjusted EBITDA can be an important financial measure because it allows management, investors, and our board of directors to evaluate and compare our operating results, including our return on capital and operating efficiencies, from period-to-period by making such adjustments.

Adjusted EBITDA is provided in addition to, and should not be considered to be a substitute for, or superior to net income, the comparable measure under U.S. GAAP. Further, Adjusted EBITDA should not be considered as an alternative to revenue growth, net income, diluted earnings per share or any other performance measure derived in accordance with U.S. GAAP, or as an alternative to cash flow from operating activities as a measure of our liquidity. Adjusted EBITDA has limitations as an analytical tool, and you should not consider such measures either in isolation or as substitutes for analyzing our results as reported under U.S. GAAP.

Reconciliations of Adjusted EBITDA to the most comparable U.S. GAAP financial metric for historical periods are presented in the table below:

Reconciliation of GAAP and Non-GAAP Financial Information

<i>(in thousands)</i>	Years Ended December 31,		
	2021	2020	2019
Net income (loss)	\$ (7,926)	\$ (12,667)	(20,303)
Interest (income) expense	296	(85)	—
Income tax expense (benefit)	254	—	(143)
Depreciation and amortization	26,324	4,494	119
EBITDA	18,948	(8,258)	(20,279)
Adjustments:			
Non-cash/non-recurring operating expenses:			
Stock-based compensation expense	68,491	3,407	745
Acquisition-related costs	21,198	—	—
Change in fair value of derivative asset (gain) loss	(12,112)	—	—
Change in fair value of contingent consideration (gain) loss	975	—	—
Realized (gain) on sale/exchange of long-term investment	(26,260)	—	—
Unrealized (gain) loss on marketable equity securities	13,655	—	—
Reversal of registration rights penalty	—	(1,358)	—
Loss on issuance of convertible notes, common stock and warrants	—	—	6,155
Change in fair value of warrant liability	—	—	2,869
Change in fair value of convertible notes	—	—	3,896
Gain on deconsolidation of Tess	—	—	(1,139)
Gain on sale of equipment	—	(29)	—
Other (income) expense	(2,378)	6	(874)
Other revenue, (income) expense items:			
License fees	(97)	(97)	(96)
Adjusted EBITDA	<u>\$ 82,420</u>	<u>(6,329)</u>	<u>\$ (8,723)</u>

Results of Operations Comparative Results for the Years Ended December 31, 2020 and 2019:

Revenues:

Mining revenues for the years ended December 31, 2020 and 2019, totaled approximately \$12.0 million and \$6.7 million, respectively. Other revenue consisted of license payments of approximately \$0.1 million in each period. Revenues from cryptocurrency mining are impacted significantly by volatility in Bitcoin prices, as well as increases in the Bitcoin blockchain's network hash rate resulting from the growth in the overall quantity and quality of miners working to solve blocks on the Bitcoin blockchain and the difficulty index associated with the secure hashing algorithm employed in solving the blocks.

From early 2019 to the end of 2020 the Bitcoin blockchain's network hash rate increased by approximately 249% as a result of, among other factors, the increased number of miners working to solve blocks on the Bitcoin blockchain during that period, many of which make use of newer, more efficient ASIC chips that are specially designed to solve blocks using the SHA-256 set of cryptographic hash functions employed on the Bitcoin blockchain. For years ended December 31, 2020 and 2019, the average network hash rate working on the Bitcoin blockchain was 142.74 EH/s and 98.67 EH/s, respectively. Further, the difficulty index increased over 231% in the past two fiscal years. The cumulative difficulty index increase over each of years ended December 31, 2020 and 2019 was 43.79% and 97.67%, respectively.

Cost and Expenses:

Cost of revenue for the year ended December 31, 2020 of approximately \$6.3 million consisted primarily of direct production costs of the mining operations, including rent and utilities and fees paid to Coinmint pursuant to the Coinmint Agreement, but excluding depreciation and amortization, which are separately stated. The cost of revenue for the year ended December 31, 2019 was approximately \$6.1 million. The cost of revenue for the years ended December 31, 2020 and 2019 as a percentage of mining revenue totaled 52.2% and 90.4%, respectively. The improvement in 2020 resulted from higher average Bitcoin values for mined Bitcoin and lower fixed and variable costs incurred for costs of revenue for the second half of 2020 following the relocation to the Coinmint Facility.

During the year ended December 31, 2020, we recorded a gain on the sale / exchange of cryptocurrencies of approximately \$5.2 million. During the year ended December 31, 2019 the gain on sale of cryptocurrencies was \$0.7 million.

Selling, General and Administrative Expenses:

Selling, general and administrative expenses for the year ended December 31, 2020 totaled approximately \$10.3 million, which is an approximately \$1.1 million, or a 11.9% increase, as compared to \$9.2 million in the 2019 period. Compensation related expense decreased by approximately \$0.6 million due primarily to staff reductions during 2019, net of severance costs and the compensation expense of \$0.3 for Tess Pay, Inc. ("Tess") in the 2019 period, which in 2020 is no longer reported in our consolidated financial statements. Stock-based compensation increased by approximately \$2.7 million for the year ended December 31, 2020 as compared with the 2019 period due to the 2020 issuance of 1,544,359 restricted stock units and the accelerated vesting of 471,544 restricted stock units due to the resignation of a member of the Company's board. Legal fees decreased by approximately \$0.6 million due to legal matters associated primarily with the fees for the class action and derivative suits and special SEC related matters being higher in the 2019 period. Audit fees decreased approximately \$0.3 million due to the higher level of financial activities and the audit of internal controls over financial reporting incurred for the year ended December 31, 2019.

Depreciation and Amortization:

Depreciation and amortization expenses in the year ended December 31, 2020 totaled approximately \$4.5 million, which is an increase of approximately \$4.4 million, compared to \$0.1 million during the year ended December 31, 2019. The increase is primarily due to higher average depreciable equipment levels in the year ended December 31, 2020 resulting from the Company's acquisition of 7,043 new miners, which the Company depreciates over their two-year estimated usable lives using the straight-line method.

Asset Impairment Charges:

Impairment of long-term investments of \$9.4 million recognized during the year ended December 31, 2020 was recorded in connection with the impairment of our investment in Coinsquare. The Company recorded this 100% impairment as a result of the OSC Order and Settlement Agreement in which Coinsquare and certain of its executives and directors admitted to violations of Ontario securities laws and conduct contrary to the public interest in connection with their operation of the Coinsquare Market.

Impairment charges for cryptocurrencies was \$1.0 million for the year ended December 31, 2020, which was recorded to recognize an impairment of our cryptocurrencies during the three months ended March 31, 2020.

Asset impairment charges of \$1.5 million were recognized during the year ended December 31, 2019 and were related to \$0.8 million for the impairment of our cryptocurrencies accounted for as intangible assets and \$0.7 million related to our intangible assets acquired in connection with our former RiotX / Logical Brokerage business.

Other Income and Expense:

During the year ended December 31, 2020, we recognized income of approximately \$1.4 million in connection with the reversal of our registration rights penalty.

During the year ended December 31, 2019, we recognized losses related to the issuance of convertible notes of approximately \$6.2 million and expenses totaling \$6.8 million to revalue the notes and the related warrant liability to fair value.

During the year ended December 31, 2019, we recorded a gain of approximately \$1.1 million on the deconsolidation of Tess, due to our reduced ownership interest from 50.2% to 8.8%. No such expense was recognized during the year ended December 31, 2020.

During the years ended December 31, 2020 and 2019, interest income and interest expense was nominal.

Other expense for the year ended December 31, 2020 was nominal. Other income was approximately \$0.9 million for the year ended December 31, 2019, due to a \$0.4 million gain on forgiveness of our payable and interest in connection with our former agreement with BMSS, and a \$0.5 million gain on forgiveness of various accounts payable balances.

Income Taxes:

For the years ended December 31, 2020 and 2019, the Company recorded income tax benefits of zero and \$0.1 million, respectively.

LIQUIDITY AND CAPITAL RESOURCES

At December 31, 2021, we had working capital of approximately \$463.7 million, which included cash and cash equivalents of \$312.3 million. We reported a net loss of \$7.9 million during the year ended December 31, 2021. Net loss included \$108.9 million in non-cash items consisting primarily of a realized gain on the sale/exchange of long-term investment of \$26.3 million and the change in fair value of our derivative asset of \$12.1 million, offset by stock-based compensation expense of \$68.5 million, the impairment of cryptocurrencies of \$36.5 million, depreciation and amortization of \$26.3 million, an unrealized loss on marketable securities of \$13.7 million, the issuance of common stock warrants of \$1.2 million and income tax expense of \$0.3 million.

Contractual Commitments

At December 31, 2021, we had the following contractual commitments (in thousands):

Agreement Date *	Original Purchase Commitment	Open Purchase Commitment	Deposit Balance	Expected Shipping
April 5, 2021	\$ 138,506	\$ 52,838	\$ 85,668	First Quarter 2022 - Fourth Quarter 2022
October 29, 2021	56,250	31,950	24,300	Second Quarter 2022 - Third Quarter 2022
November 22, 2021	32,550	21,158	11,392	Third Quarter 2022 - Fourth Quarter 2022
December 10, 2021	97,650	63,472	34,178	Third Quarter 2022 - Fourth Quarter 2022
December 24, 2021	202,860	131,859	71,001	Third Quarter 2022 - Fourth Quarter 2022
Total	\$ 527,816	\$ 301,277	\$ 226,539	

* Pursuant to the Company's agreements with Bitmain, the Company is responsible for all shipping charges incurred in connection with the delivery of the miners.

Coinmint Co-location Mining Services Agreement

On April 8, 2020, the Company entered into an agreement with Coinmint (the "Coinmint Agreement"), pursuant to which Coinmint agreed to provide up to approximately 9.5 MW of electrical power and to perform all maintenance necessary to operate Riot's miners deployed at the Coinmint Facility. In exchange, Coinmint is reimbursed for direct production expenses and receives a performance fee based on the net cryptocurrencies generated by Riot's miners deployed at the Coinmint Facility. The amount of electrical power supplied to Riot's miners at the Coinmint Facility has subsequently been increased to accommodate Riot's expanding miner fleet. However, no formal written amendment to the Coinmint Agreement solidifying Riot's continuing access to sufficient power to operate its expanding fleet of miners has been entered into with Coinmint. The initial term of the Coinmint Agreement was six months, with automatic renewals for subsequent three month terms until terminated as provided in the agreement.

Miners

During 2021, we entered into six purchase agreements with Bitmain to acquire 52,500 Antminer model S19j (90 Terahash per second) ("TH/s") miners and 30,000 of their latest Antminer model S19XP (140 TH/s) miners for a combined total purchase price of approximately \$535.0 million. Pursuant to these agreements, approximately \$301.3 million remains payable to Bitmain in installments in advance of shipment of the miners, which is scheduled to occur on a monthly basis through December 2022. Of the remaining miners to be delivered, 48,495 new S19j-Pro model miners and 30,000 new S19XP model miners are all scheduled to be delivered throughout the year ended December 31, 2022.

During the year ended December 31, 2020, the Company entered into purchase agreements with Bitmain for the acquisition of a total of 33,646 of their model S19, S19-Pro, and S19j-Pro Antminer series of miners, to be shipped and delivered during 2020 and 2021. During the year ended December 31, 2020, the Company received 3,043 model S19 Antminers of these 33,646 new miners, all of which were deployed at the Coinmint Facility. The remaining 30,603 of these new miners were delivered in monthly shipments through January 2022.

During December 2019, the Company purchased 4,000 Bitmain model S17-Pro Antminers for a total purchase price of approximately \$6.3 million directly from Bitmain. During the year ended December 31, 2020, the Company relocated all 4,000 of these miners from its former Oklahoma facility to the Coinmint Facility in Massena, New York.

Revenue from Operations

Funding our operations on a go-forward basis will rely significantly on our ability to mine Bitcoin at a price above our Mining costs and revenue generated from our Hosting and Engineering customers. We expect to generate ongoing revenues from Bitcoin rewards from our Mining operations and our ability to liquidate Bitcoin rewards at future values will be evaluated from time-to-time to generate cash for operations.

Generating Bitcoin rewards, for example, which exceed our production and overhead costs will determine our ability to report profit margins related to such mining operations, although accounting for our reported profitability is significantly complex. Furthermore, regardless of our ability to generate revenue from the sale of our Bitcoin from our Mining business, we may need to raise additional capital in the form of equity or debt to fund our operations and pursue our business strategy.

The ability to raise funds through the sale of equity, debt financings, or the sale of Bitcoin to maintain our operations is subject to many risks and uncertainties and, even if we were successful, future equity issuances or convertible debt offerings could result in dilution to our existing stockholders and any future debt or debt securities may contain covenants that limit our operations or ability to enter into certain transactions. Our ability to realize revenue through Bitcoin production and successfully convert Bitcoin into cash or fund overhead with Bitcoin is subject to a number of risks, including regulatory, financial and business risks, many of which are beyond our control. Additionally, we have observed significant historical volatility in the market price of Bitcoin and, as such, future prices cannot be predicted. See the discussion of risks affecting our business under Part I, Item 1A. "Risk Factors" of this Annual Report.

If we are unable to generate sufficient revenue from our Mining operations, Hosting operations or Engineering operations when needed or secure additional sources of funding, it may be necessary to significantly reduce our current rate of spending or explore other strategic alternatives.

At-the-Market Equity Offerings

2021 ATM Offering

In August 2021, we entered into a Sales Agreement with Cantor Fitzgerald & Co., B. Riley FBR, Inc., BTIG, LLC, Compass Point Research & Trading, LLC and Roth Capital Partners, LLC (the "Sales Agents") dated August 31, 2021 (the "Sales Agreement"), pursuant to which we sold \$600 million in shares of our common stock through the Sales Agents, acting as our sales agent and/or principal, in a continuous at-the-market offering (the "2021 ATM Offering"). All sales of the shares in connection with the ATM Offering were made pursuant to an effective shelf registration statement on Form S-3 (Registration No. 333-259212) filed with the SEC on August 31, 2021. During the period August 31, 2021 to December 31, 2021, we received gross proceeds of \$600 million (\$587.2 million, net of \$12.8 million in commissions paid to the Sales Agents and expenses) from the sale of 19,910,589 shares of our common stock, with an average fair value of \$29.53 per share, in the 2021 ATM Offering. As of December 31, 2021, all \$600 million in shares of our common stock registered under the December 2021 Registration Statement had been issued and, accordingly, we completed the 2021 ATM Offering.

2020 ATM Offering

During January 2021, in connection with the Second Amendment to the At-the-Market Sales Agreement, as amended, with our sales agent under such agreement, H.C. Wainwright, we received gross proceeds of approximately \$84.8 million (\$82.7 million net, after \$2.1 million in expenses) from the sale of 4,433,468 shares of common stock, with an average fair value of \$19.13 per share pursuant to the registration statement on Form S-3 (File No. 333-251149) filed with the SEC on December 4, 2020 (the "December 2020 ATM Offering"). With the sale and issuance of these shares and of the shares previously sold and issued during the year ended December 31, 2020, all \$200 million in shares of our common stock registered under the December 2020 Registration Statement had been issued and we completed the December 2020 ATM Offering. Under the terms of the December 2020 ATM Offering, only shares of our common stock were issued.

As of October 15, 2020, the Company and H.C. Wainwright entered into the first amendment to the Sales Agreement (the "First Amendment to the Sales Agreement"). Pursuant to the First Amendment to the Sales Agreement, the Company sold, through H.C. Wainwright as its sales agent, \$100.0 million in shares of the Company's common stock in an at-the-market offering (the "October 2020 ATM Offering"). The Company paid H.C. Wainwright a commission of up to 3.0% of the aggregate gross proceeds the Company received from all sales of its common stock in the October 2020 ATM Offering.

2019 ATM Offering

During the year ended December 31, 2020, we received net proceeds of approximately \$257.5 million (after deducting \$7.3 million in commissions and expenses) from sales of 49,932,051 shares of its common stock, no par value, at a weighted average gross sales price of \$5.30 per share pursuant to an At-The-Market Sales Agreement, dated effective as of May 24, 2019, as amended (the “2019 ATM Sales Agreement”), with its sales agent, H.C. Wainwright & Co., LLC (“Wainwright”).

For a more detailed discussion of our At-the-Market Equity Offerings, see Note 12, “Stockholders’ Equity”, to our Consolidated Financial Statements for the fiscal years ended December 31, 2021, 2020 and 2019, beginning on page F-37 of this Annual Report on Form 10-K.

Legal Proceedings

The Company has been named a defendant in several class action and other investor related lawsuits as more fully described in Part I, Item 3., “Legal Proceedings”, of this Annual Report on Form 10-K. While the Company maintains policies of insurance, such policies may not cover all of the costs or expenses associated with responding to such matters or any liability or settlement associated with any lawsuits and are subject to significant deductible or retention amounts.

Operating Activities

Net cash used in operating activities was \$86.4 million during the year ended December 31, 2021. Cash was consumed from operations by a net loss of \$7.9 million, less non-cash items of \$108.9 million, consisting primarily of a realized gain on the sale/exchange of long-term investment of \$26.3 million and the change in fair value of our derivative asset of \$12.1 million, partially offset by stock-based compensation expense of \$68.5 million, the impairment of cryptocurrencies of \$36.5 million, depreciation and amortization of \$26.3 million, an unrealized loss on marketable equity securities of \$13.7 million, the issuance of common stock warrants of \$1.2 million, and income tax expense of \$0.3 million, net of other immaterial items. The change in assets and liabilities of \$187.3 million consisted primarily of increased cryptocurrencies of \$184.4 million, increased accounts receivable of \$4.4 million, increased security deposits of \$3.2 million, decreased costs and estimated earnings in excess of billings of \$3.3 million, increased prepaid expenses and other current assets of \$1.9 million, increased accounts payable and accrued expenses of \$13.3 million, change in fair value of future power credits of \$1.0 million, increased customer deposits of \$6.1 million, decreased deferred revenue of \$12.9 million, decreased lease liabilities of \$1.7 million and decreased billings in excess of costs and estimated earnings of \$0.6 million.

Net cash used in operating activities was \$11.1 million during the year ended December 31, 2020. Cash was consumed from continuing operations by the net loss of \$12.7 million, less non-cash items of \$12.0 million, consisting of the impairment of our investment in Coinsquare of \$9.4 million, depreciation and amortization totaling \$4.5 million, stock-based compensation totaling \$3.4 million, impairment to our cryptocurrencies of \$1.0 million, and amortization of our right of use assets of \$0.4 million, partially offset by a \$5.2 million realized gain on the sale / exchange of cryptocurrencies, \$1.4 million for the reversal of our accrual for the registration rights penalty, and amortization of our license revenue of \$0.1 million. Cryptocurrencies increased by \$11.8 million and prepaid expenses and other current assets decreased by \$0.8 million, offset by, an increase in accounts payable and accrued expenses of \$0.9 million and a decrease in our lease liability of \$0.4 million.

Net cash used in operating activities was \$15.4 million during the year ended December 31, 2019. Cash was consumed from the net loss of \$20.3 million, less non-cash items of \$14.7 million, including a loss on the issuance of our convertible notes, common stock and warrants of \$6.2 million, the change in fair value of our convertible notes and the related warrant liability of \$6.8 million, amortization of our right of use assets of \$2.3 million, stock-based compensation totaling \$0.7 million, impairment to our cryptocurrencies of \$0.8 million, an impairment of intangible assets acquired of \$0.7 million related to our decision not to pursue our Logical Brokerage business, net of deferred income tax benefit of \$0.1 million, and depreciation and amortization totaling \$0.1 million, offset by a \$1.1 million gain recognized on the deconsolidation of Tess, a \$0.9 million gain on the extinguishment of notes, interest and accounts payable, other income of approximately \$0.1 million, primarily related to the amortization of our deferred revenue related to our legacy animal health business and a \$0.7 million related to the gain from the sale of cryptocurrencies. Cryptocurrencies increased by \$6.6 million, offset by, a decrease in our lease liability of \$2.3 million and a decrease in accounts payable and accrued expenses of \$0.8 million.

Investing Activities

Net cash used in investing activities during the year ended December 31, 2021 was \$490.3 million, primarily consisting of deposits on equipment of \$274.8 million, our acquisition of Whinstone of \$40.9 million, net, our acquisition of ESS Metron of \$29.6 million, net, and purchases of property and equipment of \$147.1 million, partially offset by proceeds of \$1.8 million received for our Coinsquare investment.

Net cash used in investing activities during the year ended December 31, 2020 was \$32.8 million, consisting of proceeds received from the sale of cryptocurrencies of \$8.3 million and proceeds received from the sale of property and equipment of \$0.1 million, partially offset by deposits on equipment of \$33.1 million, and purchases of property and equipment of \$8.1 million.

Net cash used in investing activities during the year ended December 31, 2019 was \$3.2 million, consisting of proceeds from the sale of cryptocurrencies of \$3.2 million, offset by \$5.0 million for the purchase of Bitmain S17-Pro Antminers and deposits on equipment of \$1.4 million.

Financing Activities

Net cash provided by financing activities was \$665.6 million during the year ended December 31, 2021, which consisted of net proceeds from the issuance of our common stock in connection with our ATM Offerings of \$669.9 million and proceeds received from the exercise of common stock warrants of \$0.8 million, partially offset by the shares of common stock withheld to satisfy employee withholding taxes of \$5.1 million in connection with the settlement of vested equity awards granted under our 2019 Equity Plan.

Net cash provided by financing activities was \$259.9 million during the year ended December 31, 2020, which primarily consisted of net proceeds from the issuance of our common stock in connection with our 2019 ATM Offering of \$48.0 million and \$209.5 million in connection with our 2020 ATM Offering, and proceeds received from the exercise of common stock warrants of \$2.9 million, partially offset by the repurchase of common stock to pay director and employee withholding taxes of \$0.4 million.

Net cash provided by financing activities was \$25.9 million during the year ended December 31, 2019, which consisted of net proceeds from the issuance of our common stock in connection with our ATM Offering of \$23.8 million, the proceeds received from the issuance of Notes and Warrants of \$3.0 million in the 2019 Private Financing, partially offset by the repayment of the principal balance related to our agreement with BMSS of \$0.9 million, net of the \$0.4 million gain recorded on extinguishment of the BMSS balance.

Critical Accounting Policies

The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America (“GAAP”) requires management to make estimates and assumptions about future events that affect the amounts reported in the financial statements and accompanying notes. Future events and their effects cannot be determined with absolute certainty. Therefore, the determination of estimates requires the exercise of judgment. Actual results inevitably will differ from those estimates, and such differences may be material to the financial statements. The most significant accounting estimates inherent in the preparation of our financial statements include estimates associated with revenue recognition, investments, intangible assets, stock-based compensation and business combinations.

The Company’s financial position, results of operations and cash flows are impacted by the accounting policies the Company has adopted. In order to get a full understanding of the Company’s financial statements, one must have a clear understanding of the accounting policies employed. A summary of the Company’s critical accounting policies follows:

Fair value of financial instruments

The Company accounts for financial instruments under Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 820, *Fair Value Measurements* (“ASC 820”). This statement defines fair value, establishes a framework for measuring fair value in generally accepted accounting principles, and expands disclosures about fair value measurements. To increase consistency and comparability in fair value measurements, ASC 820 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels as follows:

Level 1 — quoted prices (unadjusted) in active markets for identical assets or liabilities;

Level 2 — observable inputs other than Level 1, quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, and model-derived prices whose inputs are observable or whose significant value drivers are observable; and

Level 3 — assets and liabilities whose significant value drivers are unobservable.

Observable inputs are based on market data obtained from independent sources, while unobservable inputs are based on the Company’s market assumptions. Unobservable inputs require significant management judgment or estimation. In some cases, the inputs used to measure an asset or liability may fall into different levels of the fair value hierarchy. In those instances, the fair value measurement is required to be classified using the lowest level of input that is significant to the fair value measurement. Such determination requires significant management judgment. As of December 31, 2021, the Company had derivative assets and contingent consideration liability measured at fair value. As of December 31, 2020, there were no financial assets or liabilities measured at fair value. The carrying amounts of the Company’s financial assets and liabilities, such as cash and cash equivalents, and accounts payable, approximate fair value due to the short-term nature of these instruments.

Cryptocurrencies

Cryptocurrencies (primarily Bitcoin) are included in current assets in the accompanying consolidated balance sheets. The classification of cryptocurrencies as a current asset has been made after the Company’s consideration of the significant consistent daily trading volume on readily available cryptocurrency exchanges, there are no limitations or restrictions on Company’s ability to sell Bitcoin and the pattern of actual sales of Bitcoin by the Company. Cryptocurrencies purchased are recorded at cost and cryptocurrencies awarded to the Company through its mining activities are accounted for in connection with the Company’s revenue recognition policy disclosed below.

Cryptocurrencies held are accounted for as intangible assets with indefinite useful lives. An intangible asset with an indefinite useful life is not amortized but assessed for impairment annually, or more frequently, when events or changes in circumstances occur indicating that it is more likely than not that the indefinite-lived asset is impaired. Impairment exists when the carrying amount exceeds its fair value, which is measured using the quoted price of the cryptocurrency at the time its fair value is being measured. In testing for impairment, the Company has the option to first perform a qualitative assessment to determine whether it is more likely than not that an impairment exists. If it is determined that it is not more likely than not that an impairment exists, a quantitative impairment test is not necessary. If the Company concludes otherwise, it is required to perform a quantitative impairment test. To the extent an impairment loss is recognized, the loss establishes the new cost basis of the asset. Subsequent reversal of impairment losses is not permitted.

Purchases of cryptocurrencies by the Company are included within investing activities in the accompanying consolidated statements of cash flows, while cryptocurrencies awarded to the Company through its mining activities are included within operating activities on the accompanying consolidated statements of cash flows. The sales of cryptocurrencies are included within investing activities in the accompanying consolidated statements of cash flows and any realized gains or losses from such sales are included in other income (expense) in the consolidated statements of operations. The Company accounts for its gains or losses in accordance with the first in first out (FIFO) method of accounting.

Investment in marketable equity securities

Our investment in marketable equity securities consists entirely of common shares of Mogo, Inc. (NASDAQ: MOGO), resulting from the April and May 2021 transactions. (See Note 7, “Investments in Marketable Equity Securities”). The Company accounted for this investment in accordance with ASC 321, *Investments-Equity Securities*, (“ASC 321”) due to the shares having a readily determinable fair value since they are traded on NASDAQ and have significant average daily volume traded. As a result, the investment is required to be measured at fair value at each balance sheet date with unrealized holding gains and losses recorded in other income (expense).

Impairment of long-lived assets

Management reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to undiscounted future cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets.

Leases

Effective January 1, 2019, the Company accounts for its leases under ASC 842, *Leases* (“ASC 842”). Under this guidance, arrangements meeting the definition of a lease are classified as operating or financing leases, and are recorded on the consolidated balance sheet as both a right of use asset and lease liability, calculated by discounting fixed lease payments over the lease term at the rate implicit in the lease or the Company’s incremental borrowing rate. Lease liabilities are increased by interest and reduced by payments each period, and the right of use asset is amortized over the lease term. For operating leases, interest on the lease liability and the amortization of the right of use asset result in straight-line rent expense over the lease term.

As of December 31, 2021, the Company leases its primary office locations, which expire between 2.5 and seven years, manufacturing facilities of ESS Metron, which expire between 3.5 and 10 years and a ground lease at the Whinstone Facility that expires in December 2030, all of which are inclusive of extension options the Company is reasonably certain will be exercised. At December 31, 2020, the Company did not have any significant operating lease balances.

In November 2021, the Company entered into a lease termination agreement with the landlord of certain Whinstone abandoned leases for approximately \$0.9 million. After eliminating the associated operating lease liabilities, we recognized other income of approximately \$0.7 million during the year ended December 31, 2021.

The Company also terminated two former operating leases during the year ended December 31, 2020: (i) the lease of the Oklahoma facility and (ii) the Florida lease, both of which are discussed under “Prior Leases” above.

In calculating the right of use asset and lease liability, the Company elects to combine lease and non-lease components as permitted under ASC 842. The Company excludes short-term leases having initial terms of 12 months or less from the new guidance as an accounting policy election and recognizes rent expense on a straight-line basis over the lease term.

Revenue Recognition

Mining

The Company recognizes revenue under ASC 606, Revenue from Contracts with Customers. The core principle of the revenue standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The following five steps are applied to achieve that core principle:

- Step 1: Identify the contract with the customer;
- Step 2: Identify the performance obligations in the contract;
- Step 3: Determine the transaction price;
- Step 4: Allocate the transaction price to the performance obligations in the contract; and
- Step 5: Recognize revenue when the Company satisfies a performance obligation.

In order to identify the performance obligations in a contract with a customer, a company must assess the promised goods or services in the contract and identify each promised good or service that is distinct. A performance obligation meets ASC 606’s definition of a “distinct” good or service (or bundle of goods or services) if both of the following criteria are met: The customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer (i.e., the good or service is capable of being distinct), and the entity’s promise to transfer the good or service to the customer is separately identifiable from other promises in the contract (i.e., the promise to transfer the good or service is distinct within the context of the contract).

If a good or service is not distinct, the good or service is combined with other promised goods or services until a bundle of goods or services is identified that is distinct.

The transaction price is the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both. When determining the transaction price, an entity must consider the effects of all of the following:

- Variable consideration
- Constraining estimates of variable consideration
- The existence of a significant financing component in the contract
- Noncash consideration
- Consideration payable to a customer

Variable consideration is included in the transaction price only to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. The transaction price is allocated to each performance obligation on a relative standalone selling price basis. The transaction price allocated to each performance obligation is recognized when that performance obligation is satisfied, at a point in time or over time as appropriate.

The Company has entered into digital asset mining pools by executing contracts, as amended from time to time, with the mining pool operators to provide computing power to the mining pool. The contracts are terminable at any time by either party and the Company's enforceable right to compensation only begins when the Company provides computing power to the mining pool operator. In exchange for providing computing power, the Company is entitled to a fractional share of the fixed cryptocurrency award the mining pool operator receives (less digital asset transaction fees to the mining pool operator which are immaterial and are recorded as a deduction from revenue), for successfully adding a block to the blockchain. The terms of the agreement provide that neither party can dispute settlement terms after thirty-five days following settlement. The Company's fractional share is based on the proportion of computing power the Company contributed to the mining pool operator to the total computing power contributed by all mining pool participants in solving the current algorithm.

Providing computing power to solve complex cryptographic algorithms in support of the Bitcoin blockchain (in a process known as "solving a block") is an output of the Company's ordinary activities. The provision of providing such computing power is the only performance obligation in the Company's contracts with mining pool operators. The transaction consideration the Company receives, if any, is noncash consideration, which the Company measures at fair value on the date received, which is not materially different than the fair value at contract inception or the time the Company has earned the award from the pools. The consideration is all variable. Because it is not probable that a significant reversal of cumulative revenue will not occur, the consideration is constrained until the mining pool operator successfully places a block (by being the first to solve an algorithm) and the Company receives confirmation of the consideration it will receive, at which time revenue is recognized. There is no significant financing component in these transactions.

Fair value of the cryptocurrency award received is determined using the market rate of the related cryptocurrency at the time of receipt.

Hosting

In general, we provide power for our data center customers on a variable (sub-metered) basis. A customer pays us variable monthly fees for the specific amount of power utilized at rates specified in each contract, subject to certain minimums. We recognize variable power revenue each month as the uncertainty related to the consideration is resolved, power is provided to our customers, and our customers utilize the power (the customer simultaneously receives and consumes the benefits of the Company's performance).

We have determined that our contracts contain a series of performance obligations which qualify to be recognized under a practical expedient available known as the "right to invoice." This determination allows variable consideration in such contracts to be allocated to and recognized in the period to which the consideration relates, which is typically the period in which it is billed, rather than requiring estimation of variable consideration at the inception of the contract. We have also determined that the contracts contain a significant financing component because the timing of revenue recognition differs from the timing of invoicing by a period, exceeding one year.

The Company also installs certain hosted customers' mining equipment and bills the customer at a fixed fee per piece of equipment or at an hourly rate. Revenue is recognized upon completion of the installation.

We generate engineering and construction services revenue from the fabrication and deployment of immersion cooling technology for Bitcoin mining customers. We bill the customer at a fixed monthly fee or at an hourly rate. For the construction of customer-owned equipment, revenue is recognized upon completion of each phase of the construction project, as defined in each contract. For construction of assets owned by Whinstone but paid for and used by the customer during the term of their hosting contract, revenue is recognized on a straight-line basis over the remaining life of the contract.

Maintenance services include cleaning, cabling and other services to maintain the customers' equipment. We bill the customer at a fixed monthly fee or at an hourly rate. Revenue is recognized as these services are provided.

Deferred revenue is primarily from advance payments received and is recognized on a straight-line basis over the remaining life of the contract or upon completion of the installation of the customers' equipment.

Our primary hosting contracts contain Service Level Agreement clauses, which guarantee a certain percentage of time the power will be available to our customer. In the rare case that we may incur penalties under these clauses, we account for payments made to customers in accordance with ASC 606-10-32-25, *Consideration Payable to a Customer*, which requires the payment to be recognized as variable consideration and a reduction of the transaction price and, therefore, of revenue, when not in exchange for a good or service from the customer.

Engineering

Substantially all revenue is derived from the sale of custom products built to customers' specifications under fixed-price contracts with one identified performance obligation. Revenues are recognized over time as performance creates or enhances an asset with no alternative use, and for which the Company has an enforceable right to receive compensation as defined under the contract.

To determine the amount of revenue to recognize over time, the Company utilizes the cost-to-cost method as management believes cost incurred best represents the amount of work completed and remaining on projects. As the cost-to-cost method is driven by incurred cost, the Company calculates the percentage of completion by dividing costs incurred to date by the total estimated cost. The percentage of completion is then multiplied by estimated revenues to determine inception-to-date revenue. Approved changes to design plans are generally recognized as an adjustment to the percentage of completion calculation on a catch-up basis. Revenue recognized for the period is the current inception-to-date recognized revenue less the prior period inception-to-date recognized revenue. If a contract is projected to result in a loss, the entire contract loss is recognized in the period when the loss was first determined, and the amount of the loss is updated in subsequent reporting periods. Additionally, contract costs incurred to date and expected total contract costs are continuously monitored during the term of the contract.

Changes in the job performance, job conditions and final contract settlements are factors that influence management's assessment of total contract value and the total estimated costs to complete those contracts, and therefore, profit and revenue recognition. Any costs to obtain a contract are not material to the Company's financial statements and would be expensed as incurred. Because of the inherent uncertainties in estimating costs, it is at least reasonably possible that the estimates used will change within the near term. The length of time for the Company to complete a custom product varies but is typically between four to 12 weeks.

Customers are typically required to make periodic progress payments to the Company based on contractually agreed-upon milestones. Invoices are due net, 30 days, and retainage, if any, is generally due 30 days after delivery. Taxes collected from customers and remitted to governmental authorities are excluded from revenue. Shipping and handling costs are treated as fulfillment costs and are included in cost of sales.

Other Revenue

Other revenue is revenue recognized from an upfront license fee generated from our legacy animal health business. The upfront fee was recorded as deferred revenue and is being amortized into revenue over the term of the License Agreement.

Derivative Accounting

Power Supply Contract and Demand Response Services

In May 2020, Whinstone entered into a Power Supply Agreement with TXU Energy Retail Company LLC ("TXU") to provide the delivery of a fixed amount of electricity by TXU to Whinstone (via the facility owned by Oncor Electric Delivery Company, LLC ("Oncor")) for a fixed price through April 30, 2030. The Power Supply Agreement provides a consistent and sufficient supply of electricity at the Whinstone Facility. If Whinstone uses more electricity than contracted, the cost of the excess is incurred at the current spot rate. Concurrently, Whinstone entered into a contract with Oncor for the extension of delivery system transmission/substation facilities to facilitate delivery of the electricity to the Whinstone Facility (the "Facilities Agreement"). Power costs incurred under this contract are determined on an hourly basis using settlement information provided by the Electric Reliability Council of Texas ("ERCOT") and are recorded in cost of revenues - data center hosting in our consolidated statements of operations.

The demand response services program ("Demand Response Service") provides the ERCOT market with valuable reliability and economic services by helping to preserve system reliability, enhancing competition, mitigating price spikes, and encouraging the demand side of the market to respond better to wholesale price signals. In collaboration with market participants such as the Company, ERCOT has developed demand response products and services for customers that have the ability to reduce or modify electricity use in response to instructions or signals. Market participants with electrical loads like Whinstone may participate in the Demand Response Service program directly by offering their electrical loads into the ERCOT markets, or indirectly by voluntarily reducing their energy usage in response to increasing wholesale prices.

While we manage operating costs at the Whinstone Facility in part by periodically selling unused or uneconomical power in the market back to ERCOT, we do not consider such actions trading activities. That is, we do not engage in speculation in the power market as part of our ordinary activities. Because the Demand Response Services programs allow for net settlement, we have determined the Power Supply Agreement meets the definition of a derivative under ASC 815, *Derivatives and Hedging*, ("ASC 815"). However, because we have the ability to sell the power back to the grid rather than take physical delivery, physical delivery is not probable through the entirety of the contract and therefore, we do not believe the normal purchases and normal sales scope exception applies to the Power Supply Agreement. Accordingly, the Power Supply Agreement (the non-hedging derivative contract) is recorded at estimated fair value each reporting period with the change in the fair value recorded in change in fair value of derivative asset in the consolidated statements of operations.

In February 2021, the State of Texas experienced an extreme and unprecedented winter weather event that resulted in prolonged freezing temperatures and caused an electricity generation shortage that was severely disruptive to the whole state. While demand for electricity reached extraordinary levels due to the extreme cold, the supply of electricity significantly decreased in part because of the inability of certain power generation facilities to supply electric power to the grid. Due to the extreme market price of electricity during this time, at the request of ERCOT, Whinstone stopped supplying power to its customers and instead sold power back to the grid.

In April 2021, under the provisions of the TXU Power Supply Agreement, and as a result of the weather event, Whinstone entered into a Qualified Scheduling Entity (“QSE”) Letter Agreement, which resulted in Whinstone being entitled to receive approximately \$125.1 million for its power sales during the February winter storm, all under the terms and conditions of the QSE Letter Agreement. Whinstone received cash of \$29.0 million in April 2021 (after deducting \$10.0 million in power management fees owed by Whinstone), approximately \$59.7 million is scheduled to be credited against future power bills of Whinstone beginning in 2022 and the remaining \$26.3 million is contingent upon ERCOT’s future remittance. These amounts are gross before fair value adjustments and expenses incurred by Whinstone for power management fees noted above and customer settlements. The fair value of the settlement agreement was estimated and recognized as an asset as part of acquisition accounting. Additionally, pursuant to the Northern Data stock purchase agreement, the Company agreed to pay Seller additional consideration in cash in the amount of the future power credits, net of income taxes, when and if realized by Whinstone. See Note 4, “Acquisitions”.

Business Combinations

The Company applies the provisions of ASC Topic 805, *Business Combinations*, (“ASC 805”) in the accounting for acquisitions of businesses. ASC 805 requires us to use the acquisition method of accounting by recognizing the identifiable tangible and intangible assets acquired and liabilities assumed, and any non-controlling interest in the acquired business, measured at their acquisition date fair values. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the aforementioned amounts. Contingent consideration is included within the purchase price and is recognized at its fair value on the acquisition date. A liability resulting from contingent consideration is remeasured to fair value as of each reporting date until the contingency is resolved, and subsequent changes in fair value are recognized in earnings. Contingent consideration is recorded in long-term liabilities in our consolidated balance sheets.

While we use our best estimates and assumptions to accurately apply preliminary values to assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, these estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of the assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded in our consolidated statements of operations.

Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, including estimates for intangible assets, contractual obligations assumed, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made have been reasonable and appropriate, they are based in part on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include; future expected cash flows from customer contracts, discount rates, and estimated market changes in the value of the Power Supply Agreement, which is accounted for as a nonhedged derivative contract. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates, or actual results.

Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

Goodwill and Other Intangible Assets

Goodwill represents the cost of a business acquisition in excess of the fair value of the net assets acquired. The Company determined that it has three reporting units for goodwill impairment testing purposes, Bitcoin Mining, Data Center Hosting, and Electrical Products and Engineering, which is consistent with internal management reporting and management’s oversight of operations. Goodwill is not amortized and is reviewed for impairment annually as of December 31 or more frequently if facts and circumstances indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill. We use both qualitative and quantitative analyses in making this determination. Our analyses require significant assumptions and judgments, including assumptions about future economic conditions, revenue growth, and operating margins, among other factors. Example events or changes in circumstances considered in the qualitative analysis, many of which are subjective in nature, include: a significant negative trend in our industry or overall economic trends, a significant change in how we use the acquired assets, a significant change in or our business strategy, a significant decrease in the market value of the asset, a significant change in regulations or in the industry that could affect the value of the asset, and a change in segments. If it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company performs the quantitative test to identify and measure the amount of goodwill impairment loss. The Company compares the fair value of the reporting unit with its carrying amount. If the carrying amount exceeds the fair value, goodwill of the reporting unit is considered impaired and that excess is recognized as a goodwill impairment loss.

Intangible assets with finite lives are comprised of customer contracts that are amortized on a straight-line basis over their expected useful lives, which is their contractual term. The Company performs assessments to determine whether finite-lived classification is still appropriate at least annually. The carrying value of finite-lived assets and their remaining useful lives are also reviewed at least annually to determine if circumstances exist which may indicate a potential impairment or revision to the amortization period. A finite-lived intangible asset is considered to be impaired if its carrying value exceeds the estimated future undiscounted cash flows to be derived from it. We exercise judgment in selecting the assumptions used in the estimated future undiscounted cash flows analysis. Impairment is measured by the amount that the carrying value exceeds fair value.

Segment and Reporting Unit Information

Operating segments are defined as components of an entity for which discrete financial information is available that is regularly reviewed by the Chief Operating Decision Maker (“CODM”) in deciding how to allocate resources to an individual segment and in assessing performance. A committee consisting of the Company’s executives is determined to be the CODM. The Company has three operating segments as of December 31, 2021. See Note 18, “Segment Information”.

Stock Based Compensation

The Company accounts for share-based payment awards exchanged for services at the estimated grant date fair value of the award. Stock options issued under the Company’s equity incentive plans are granted with an exercise price equal to no less than the market price of the Company’s stock at the date of grant and expire up to ten years from the date of grant. These options generally vest on the grant date or over a one- year period.

The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model and the assumptions used in calculating the fair value of stock-based awards represent management’s best estimates and involve inherent uncertainties and the application of management’s judgment.

Expected Term - The expected term of options represents the period that the Company’s stock-based awards are expected to be outstanding based on the simplified method, which is the half-life from vesting to the end of its contractual term.

Expected Volatility - The Company computes stock price volatility over expected terms based on its historical common stock trading prices.

Risk-Free Interest Rate - The Company bases the risk-free interest rate on the implied yield available on U. S. Treasury zero-coupon issues with an equivalent remaining term.

Expected Dividend - The Company has never declared or paid any cash dividends on its common shares and does not plan to pay cash dividends in the foreseeable future, and, therefore, uses an expected dividend yield of zero in its valuation models.

The Company elected to account for forfeited awards as they occur, as permitted by Accounting Standards Update (“ASU”) 2016-09. Ultimately, the actual expenses recognized over the vesting period will be for those shares that vested.

Earnings (loss) per share

Basic net earnings (loss) per share (“EPS”) of common stock is computed by dividing the Company’s net earnings (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted EPS reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock or resulted in the issuance of common stock that then shared in the earnings of the entity. The Company excludes the unvested restricted share units (RSUs) awarded to its employees, officers, directors, and contractors under the 2019 Equity Plan from this net loss per share calculation because including them would be antidilutive.

Recently issued and adopted accounting pronouncements

The Company continually assesses any new accounting pronouncements to determine their applicability. When it is determined that a new accounting pronouncement affects the Company’s financial reporting, the Company undertakes a review to determine the consequences of the change to its financial statements and believes that there are proper controls in place to ascertain that the Company’s financial statements properly reflect the change.

We have considered recently issued accounting pronouncements and do not believe the adoption of such pronouncements will have a material impact on our consolidated financial statements.

See Note 3 to our financial statements beginning on page F-9 of this Form 10-K for a description of recent accounting pronouncements applicable to our financial statements.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

The following discussion about our market risk exposures involves forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. For more information regarding the forward-looking statements used in this section and elsewhere in this Annual Report, see the Cautionary Note Regarding Forward-Looking Statements at the forepart of this Annual Report.

Risk Regarding the Price of Bitcoin.

Our business and development strategy is focused on maintaining and expanding our Mining operations to maximize the amount of new Bitcoin rewards we earn. At December 31, 2021, we held 4,884 Bitcoin, with a carrying value of \$159.5 million, all of which were produced from our Bitcoin mining operations. The carrying value of our Bitcoin assets at December 31, 2021 reflects the \$36.5 million of cumulative impairment charges we recorded against the value of our Bitcoin assets during the fiscal year ended December 31, 2021 due to decreases in the fair value of our Bitcoin assets after receipt.

As discussed in Note 3. “Basis of Presentation, Summary of Significant Accounting Policies and Recent Accounting Pronouncements” of the Notes to Consolidated Financial Statements disclosed under Part II, Item 8. “Financial Statements and Supplementary Data” of this Annual Report, under the heading “Cryptocurrencies” on page F-16 below, we account for our Bitcoin assets as indefinite-lived intangible assets, which are recorded at fair value as of the receipt, subject to impairment testing following their receipt. If the fair value of a Bitcoin asset has declined and we determine that impairment of that Bitcoin asset is appropriate, we record an impairment charge and the carrying value of the Bitcoin asset is reduced. Once an impairment charge has been assessed against the fair value of a Bitcoin asset, its carrying value cannot be recovered to reflect subsequent increases in fair value.

We cannot accurately predict the future market price of Bitcoin and, as such, we cannot accurately predict whether we will record impairment of the value of our Bitcoin assets. The future value of Bitcoin will affect the revenue from our operations, and any future impairment of the value of the Bitcoin we mine and hold for our account would be reported in our financial statements and results of operations as charges against net income, which could have a material adverse effect on the market price for our securities.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

Report of Independent Registered Public Accounting Firm (PCAOB 00688); Marcum LLP, Los Angeles, CA	F-1
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM (PCAOB ID 688)

To the Stockholders and Board of Directors of
Riot Blockchain, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Riot Blockchain, Inc. and Subsidiaries (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of operations, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2021, based on the criteria established in Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2013 and our report dated March 16, 2022, expressed an adverse opinion on the effectiveness of the Company's internal control over financial reporting because of the existence of material weaknesses.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Evaluation of the Accounting for and Disclosure of Cryptocurrencies Held

As disclosed in Note 3 to the consolidated financial statements, the Company's digital assets held as of December 31, 2021, which mainly consist of Bitcoin, are accounted for as indefinite-lived intangible assets, and have been included in current assets on the consolidated balance sheet. The Company's cryptocurrencies as of December 31, 2021 were approximately \$158.2 million. The Company's management has exercised significant judgment in their determination of how existing accounting principles generally accepted in the United States of America ("GAAP") should be applied to the accounting for cryptocurrencies held, the associated financial statement presentation and accompanying footnote disclosures.

We identified the accounting for and disclosure of cryptocurrencies held as a critical audit matter due to the nature and extent of audit effort required to obtain sufficient appropriate audit evidence to address the risks of material misstatement related to the existence and rights and obligations of cryptocurrencies held. The nature and extent of audit effort required to address the matter included significant involvement of more experienced engagement team members and discussions and consultations with subject matter experts related to the matter. In addition, the accounting for cryptocurrencies held involves the Company's information technology ("IT") environment as such assets are held in digital cold storage wallets.

The primary procedures we performed to address this critical audit matter included the following:

- Evaluated the design and effectiveness of certain internal controls over the Company's digital cold storage wallets with the assistance of our IT professionals;
- Performed an observation of the Company's digital cold storage wallets;
- Evaluated management's rationale for the application of Accounting Standards Codification ("ASC") 350 to account for its cryptocurrencies held, including management's processes for evaluating its cryptocurrencies for impairment;
- Evaluated management's rationale for the inclusion of cryptocurrencies as a current asset on the balance sheet with the assistance of our internal valuation specialists;
- Evaluated management's disclosures of its cryptocurrency activity in the financial statement footnotes; and
- Examined supporting sale and cash receipt evidence for cryptocurrency sales, including management's processes for calculating any gains on sales of cryptocurrencies.

Evaluation of the Accounting for and Disclosure of Cryptocurrency Mining Revenue Recognized

As disclosed in Note 3, the Company recognizes revenue in accordance with ASC 606, Revenue from Contracts with Customers. The Company provides computing power services to a digital asset mining pool (the "Pool") and has executed a contract with the Pool operator to provide computing power to the Pool. The contract, as amended, is terminable at any time by either party and the Company's enforceable right to compensation only begins when the Company provides computing power to the Pool. In exchange for providing computing power, the Company is entitled to a fractional share of the fixed cryptocurrency award the Pool operator receives for successfully adding a block to the blockchain, plus a fractional share of the transaction fees attached to that block. The Company's fractional share is based on the proportion of computing power the Company contributed to the Pool as compared to the total computing power contributed by the Pool participants in solving the current algorithm. The contract between the Company and the Pool also specifies that both parties waive any rights, claims or notices to revise or adjust any of the amounts of fractional share of the fixed cryptocurrency awarded to the Company after 35 days of the date of any cryptocurrency award. During the year ended December 31, 2021, the Company recognized net cryptocurrency mining revenue of approximately \$184.4 million. The Company's management has exercised significant judgment in their determination of how existing GAAP should be applied to the accounting for and disclosure of cryptocurrency mining revenue recognized. In addition, a significant portion of the Company's cryptocurrency mining hardware that provides computing power to the Pool is currently hosted at a third party facility. As such, the overall accounting for and disclosure of cryptocurrency mining revenue recognized involved the IT environment of both the Company and the third party hosting facility.

We identified the accounting for and disclosure of cryptocurrency mining revenue recognized as a critical audit matter due to the complexities involved in auditing completeness and occurrence of the revenue recognized by the Company, particularly in light of material weakness identified in the design and effectiveness of certain internal controls over the IT environment for certain financially relevant systems.

The primary procedures we performed to address this critical audit matter included the following:

- Evaluated the design and effectiveness of IT general controls over the Company's IT environment and key financially relevant systems. We also performed similar procedures over the IT environment of the third party hosting facility;
- Performed a site visitation of the facilities where the Company's mining hardware is located, which included an observation of the physical and environmental controls and mining equipment inventory observation procedures;
- On a sample basis testing the hashing power contributed by the Company's mining hardware;
- Evaluated management's rationale for the application of ASC 606 to account for its cryptocurrency awards earned, which included evaluating the provisions of the contract between the Company and the Pool;
- Evaluated management's disclosures of its cryptocurrency activity in the financial statement footnotes;
- Evaluated and tested management's rationale and supporting documentation associated with the valuation of cryptocurrency awards earned;
- Independently confirmed certain financial and performance data directly with the blockchain network and the Pool;
- Compared the Company's digital cold storage wallet records to publicly available blockchain records; and
- Performed certain substantive analytical procedures to determine completeness and occurrence of digital assets earned by the Company as consideration for services rendered.

Evaluation of the Initial Measurement of Certain Intangible and Derivative Assets Acquired

As disclosed in Note 4 to the consolidated financial statements, during the year ended December 31, 2021 the Company completed acquisitions of Whinstone US, Inc. ("Whinstone") and Ferrie Franzmann Industries, LLC (d/b/a ESS Metron) ("Metron"). The acquisitions were each accounted for as business combinations in accordance with ASC 805. Under this method of accounting, the Company allocated the fair value of purchase consideration transferred to the tangible and intangible assets acquired and liabilities assumed in each acquisition based on their estimated fair values on the date of acquisition, which included Whinstone and Metron customer relationship intangible assets and a derivative asset pertaining to a Whinstone power supply contract. The determination of the acquisition date fair value of these intangible assets required the Company to evaluate complex GAAP and develop assumptions, including key assumptions regarding forecasted revenues and related growth rates, forecasted operating cash flows, customer attrition rates, and the discount rates.

We identified the initial measurement of the customer relationships intangible assets and power supply derivative asset as a critical audit matter due to the nature and extent of audit effort required to obtain sufficient appropriate audit evidence to address the risks of material misstatement related to the valuation of the intangible and derivative assets. The nature and extent of audit effort required to address the matter included significant involvement of more experienced engagement team members and discussions and consultations with subject matter experts related to the matter.

The primary procedures we performed to address this critical audit matter included the following.

- Evaluated the design and effectiveness of internal controls over the Company's accounting for business combinations;
- Compared the significant assumptions in the prospective financial information, including, but not limited to, the forecasted revenue growth rates, margins, expected annual customer attrition, and the estimated economic life, as appropriate for each calculation to current industry trends, as well as to the historical performance of the acquired businesses;
- With the assistance of our valuation specialists, evaluated the reasonableness of the valuation methodology, and significant assumptions, including discount rates, utilized in valuing the intangible assets and derivative assets. This included understanding and validating the source information underlying the determination of the discount rates and testing the mathematical accuracy of the calculations;
- With the assistance of our valuation specialists, developed a range of independent estimates for the discount rates using publicly available market data for comparable entities and comparing those to the discount rates selected by management; and
- Evaluated the Company's technical analysis and provisions of the power supply contract in accordance with ASC 815.

/s/ Marcum LLP

Marcum LLP

We have served as the Company's auditor since 2019.

Los Angeles, CA
March 16, 2022

Riot Blockchain, Inc. and Subsidiaries
Consolidated Balance Sheets
(in thousands, except for share and per share amounts)

	December 31, 2021	December 31, 2020
ASSETS		
Current assets		
Cash and cash equivalents	\$ 312,315	\$ 223,382
Accounts receivable, net	15,398	-
Prepaid expenses and other current assets	7,135	1,257
Costs and estimated earnings in excess of billings	9,862	-
Cryptocurrencies	159,544	11,626
Investments in marketable equity securities, at fair value	10,804	-
Future power credits, current portion	58,481	-
Total current assets	573,539	236,265
Property and equipment, net	262,980	10,143
Deposits	266,170	33,093
Long-term investments	310	310
Right of use assets	13,189	-
Derivative asset	26,079	-
Intangible assets, net	14,162	336
Goodwill	349,063	-
Future power credits, less current portion	25,447	-
Total assets	\$ 1,530,939	\$ 280,147
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 20,037	\$ 718
Accrued expenses	22,071	1,582
Billings in excess of costs and estimated earnings	5,264	-
Deferred revenue, current portion	2,843	97
Operating lease liability, current portion	1,182	-
Contingent consideration liability - future power credits, current portion	58,481	-
Total current liabilities	109,878	2,397
Deferred revenue, less current portion	19,796	679
Operating lease liability, less current portion	12,257	-
Contingent consideration liability - future power credits, less current portion	25,447	-
Other long-term liabilities	6,241	-
Total liabilities	173,619	3,076
Commitments and contingencies - Note 15		
Stockholders' equity		
Preferred stock, no par value, 15,000,000 shares authorized:		
2% Series A Convertible stock, 2,000,000 shares authorized; no shares issued and outstanding as of December 31, 2021 and 2020	-	-
0% Series B Convertible stock, 1,750,001 shares authorized; 2,199 and 4,199 shares issued and outstanding as of December 31, 2021 and 2020, respectively, liquidation preference over common stock, equal to carrying value	11	22
Common stock, no par value; 170,000,000 shares authorized; 116,748,472 and 78,523,517 shares issued and outstanding as of December 31, 2021 and 2020, respectively	1,595,147	506,961
Accumulated deficit	(237,838)	(229,912)
Total stockholders' equity	1,357,320	277,071
Total liabilities and stockholders' equity	\$ 1,530,939	\$ 280,147

See Accompanying Notes to Consolidated Financial Statements.

Riot Blockchain, Inc. and Subsidiaries
Consolidated Statements of Operations
(in thousands, except for share and per share amounts)

	Years Ended December 31,		
	2021	2020	2019
Revenue:			
Revenue, net - mining	\$ 184,422	\$ 11,984	\$ 6,741
Revenue, net - hosting	24,546	-	-
Revenue, net - engineering	4,178	-	-
Other revenue	97	97	96
Total revenue	213,243	12,081	6,837
Costs and expenses:			
Cost of revenues - mining (exclusive of depreciation and amortization shown below)	45,513	6,251	6,097
Cost of revenues - hosting (exclusive of depreciation and amortization shown below)	32,998	-	-
Cost of revenues - engineering	3,582	-	-
Acquisition-related costs	21,198	-	-
Selling, general and administrative	87,429	10,251	9,159
Depreciation and amortization	26,324	4,494	119
Change in fair value of derivative asset	(18,626)	-	-
Change in fair value of contingent consideration	975	-	-
Realized gain on sale/exchange of cryptocurrencies	(253)	(5,184)	(665)
Impairment of intangible rights acquired	-	-	700
Impairment of long-term investment	-	9,413	-
Impairment of cryptocurrencies	36,462	989	844
Total costs and expenses	235,602	26,214	16,254
Operating loss	(22,359)	(14,133)	(9,417)
Other income (expense):			
Loss on issuance of convertible notes, common stock and warrants	-	-	(6,155)
Change in fair value of warrant liability	-	-	(2,869)
Change in fair value of convertible notes	-	-	(3,896)
Reversal of registration rights penalty	-	1,358	-
Gain on deconsolidation of Tess	-	-	1,139
Gain on sale of equipment	-	29	-
Interest income	-	85	-
Interest expense	(296)	-	(122)
Other income (expense)	2,378	(6)	874
Realized gain on sale/exchange of long-term investment	26,260	-	-
Unrealized loss on marketable equity securities	(13,655)	-	-
Total other income (expense)	14,687	1,466	(11,029)
Net loss before taxes	(7,672)	(12,667)	(20,446)
Current income tax expense	(254)	-	-
Deferred income tax benefit	-	-	143
Net loss	(7,926)	(12,667)	(20,303)
Net (income) loss attributable to non-controlling interest	-	(7)	264
Net loss attributable to Riot Blockchain	\$ (7,926)	\$ (12,674)	\$ (20,039)
Basic and diluted net loss per share	\$ (0.08)	\$ (0.30)	\$ (1.02)
Basic and diluted weighted average number of shares outstanding	93,452,764	41,976,704	19,597,977

See Accompanying Notes to Consolidated Financial Statements.

Riot Blockchain, Inc. and Subsidiaries
Consolidated Statement of Stockholders' Equity
(in thousands, except for share and per share amounts)

	Preferred Stock		Common Stock		Accumulated deficit	Total Riot Blockchain stockholders' equity	Non-controlling interest	Total stockholders' equity
	Shares	Amount	Shares	Amount				
Balance as of January 1, 2019	13,000	\$ 69	14,519,058	\$ 202,917	\$ (197,199)	\$ 5,787	\$ (1,296)	\$ 4,491
Delivery of common stock underlying restricted stock units	-	-	239,751	-	-	-	-	-
Common stock issued with convertible notes	-	-	150,000	255	-	255	-	255
Common stock issued in connection with conversion of notes payable	-	-	1,813,500	10,226	-	10,226	-	10,226
Reclassification of warrant liability to equity	-	-	-	5,439	-	5,439	-	5,439
Preferred stock converted to common stock	(8,801)	(47)	8,801	47	-	-	-	-
Stock-based compensation	-	-	-	745	-	745	-	745
Issuance of common stock, net of offering costs/At-the-market offering	-	-	8,351,762	23,829	-	23,829	-	23,829
Net loss attributable to non-controlling interest	-	-	-	-	-	-	(264)	(264)
Deconsolidation of Tess	-	-	-	-	-	-	1,553	1,553
Net loss	-	-	-	-	(20,039)	(20,039)	-	(20,039)
Balance as of December 31, 2019	4,199	22	25,082,872	243,458	(217,238)	26,242	(7)	26,235
Issuance of common stock to settle executive compensation	-	-	122,377	175	-	175	-	175
Delivery of common stock underlying restricted stock units to settle executive compensation	-	-	5,000	-	-	-	-	-
Delivery of common stock underlying restricted stock units, net of tax withholding settlement	-	-	2,048,096	(446)	-	(446)	-	(446)
Delivery of common stock underlying restricted stock units for consulting and advisory services	-	-	40,634	-	-	-	-	-
Issuance of common stock, net of offering costs/At-the-market offering	-	-	49,932,051	257,472	-	257,472	-	257,472
Issuance of common stock related to exercise of warrants	-	-	1,492,487	2,895	-	2,895	-	2,895
Cancellation of Prive Escrow shares	-	-	(200,000)	-	-	-	-	-
Stock-based compensation	-	-	-	3,407	-	3,407	-	3,407
Net income attributable to non-controlling interest	-	-	-	-	-	-	7	7
Net loss	-	-	-	-	(12,674)	(12,674)	-	(12,674)
Balance as of December 31, 2020	4,199	22	78,523,517	\$ 506,961	\$ (229,912)	\$ 277,071	\$ -	\$ 277,071
Delivery of common stock underlying restricted stock units, net of shares settled for tax withholding settlement	-	-	464,021	(5,082)	-	(5,082)	-	(5,082)
Issuance of common stock related to exercise of warrants	-	-	415,657	806	-	806	-	806
Issuance of common stock for settlement of 1,257,235 warrants on a cashless basis	-	-	543,686	-	-	-	-	-
Issuance of common stock in connection with the acquisition of Whinstone	-	-	11,800,000	326,152	-	326,152	-	326,152
Issuance of common stock in connection with the acquisition of ESS Metron, net of 70,156 shares withheld	-	-	645,248	26,735	-	26,735	-	26,735
Issuance of common stock/At-the-market offering, net of offering costs	-	-	24,344,057	669,916	-	669,916	-	669,916
Issuance of common stock warrant for settlement of advisory fees	-	-	-	1,157	-	1,157	-	1,157
Conversion of preferred stock to common stock	(2,000)	(11)	2,000	11	-	-	-	-
Stock option exercise	-	-	10,286	-	-	-	-	-
Stock-based compensation	-	-	-	68,491	-	68,491	-	68,491
Net loss	-	-	-	-	(7,926)	(7,926)	-	(7,926)
Balance as of December 31, 2021	2,199	\$ 11	116,748,472	\$ 1,595,147	\$ (237,838)	\$ 1,357,320	\$ -	\$ 1,357,320

See Accompanying Notes to Consolidated Financial Statements

Riot Blockchain, Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(in thousands)

	Years Ended December 31,		
	2021	2020	2019
Cash flows from operating activities			
Net loss	\$ (7,926)	\$ (12,667)	\$ (20,303)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation	68,491	3,407	745
Depreciation and amortization	26,324	4,494	119
Amortization of license fee revenue	(97)	(97)	(96)
Amortization of right of use assets	275	367	2,297
Income tax expense (benefit)	254	-	(143)
Issuance of common stock warrant for settlement of advisory fees	1,157	-	-
Impairment of long-term investment	-	9,413	-
Impairment of cryptocurrencies	36,462	989	844
Loss on issuance of convertible notes, common stock and warrants	-	-	6,155
Change in fair value of convertible notes	-	-	3,896
Change in fair value of warrant liability	-	-	2,869
Gain on deconsolidation of Tess	-	-	(1,139)
Impairment of intangible rights acquired	-	-	700
Reversal of registration rights penalty	-	(1,358)	-
Change in fair value of derivative asset	(12,112)	-	-
Change in fair value of contingent consideration	975	-	-
Gain on extinguishment of accounts payable, other liabilities and accrued interest	-	-	(854)
Realized gain on sale/exchange of long-term investment	(26,260)	-	-
Realized gain on sale/exchange of cryptocurrencies	(253)	(5,184)	(665)
Unrealized loss on marketable equity securities	13,655	-	-
Gain on sale of equipment	-	(29)	-
Accrued interest on Verady investment	-	-	(20)
Changes in assets and liabilities:			
Accounts receivable	(4,446)	-	-
Prepaid expenses and other current assets	(1,890)	795	(101)
Costs and estimated earnings in excess of billings	3,343	-	-
Cryptocurrencies - mining	(184,422)	(11,838)	(6,606)
Security deposits	(3,180)	-	-
Future power credits	(975)	-	-
Accounts payable	(2,770)	1	(1,887)
Accrued expenses	16,070	928	1,070
Billings in excess of costs and estimated earnings	(619)	-	-
Customer deposits	6,124	-	-
Deferred revenue	(12,895)	-	-
Lease liability	(1,662)	(368)	(2,296)
Net cash used in operating activities	<u>(86,377)</u>	<u>(11,147)</u>	<u>(15,415)</u>
Cash flows from investing activities			
Acquisition of Whinstone, net of cash acquired	(40,879)	-	-
Acquisition of ESS Metron, net of cash acquired	(29,567)	-	-
Proceeds from the sale of long-term investments	1,800	-	-
Proceeds from sale of cryptocurrencies	295	8,298	3,196
Proceeds from the sale of equipment	-	146	-
Deposits on equipment	(274,833)	(33,093)	(1,449)
Purchases of property and equipment, including construction in progress	(147,116)	(8,139)	(4,958)
Patent costs incurred	(30)	(44)	(38)
Net cash used in investing activities	<u>(490,330)</u>	<u>(32,832)</u>	<u>(3,249)</u>
Cash flows from financing activities			
Proceeds from issuance of convertible notes	-	-	3,000
Repayment of notes payable and other obligations	-	-	(950)
Proceeds from the issuance of common stock / At-the-market offering	684,817	264,727	24,825
Offering costs for the issuance of common stock / At-the-market offering	(14,901)	(7,255)	(996)
Proceeds from exercise of common stock warrants	806	2,895	-
Repurchase of common shares to pay employee withholding taxes	(5,082)	(446)	-
Net cash provided by financing activities	<u>665,640</u>	<u>259,921</u>	<u>25,879</u>
Net increase in cash and cash equivalents	88,933	215,942	7,215
Cash and cash equivalents at beginning of year	223,382	7,440	225
Cash and cash equivalents at end of year	<u>\$ 312,315</u>	<u>\$ 223,382</u>	<u>\$ 7,440</u>
Supplemental disclosure of cash flow information:			
Cash paid for interest	\$ -	\$ -	\$ -
Cash paid for taxes	\$ -	\$ -	\$ -
Supplemental disclosure of noncash investing and financing activities:			
Issuance of common stock for business combinations	<u>\$ 352,887</u>	<u>\$ -</u>	<u>\$ -</u>

	Years Ended December 31,		
	2021	2020	2019
Issuance of common stock to settle previously accrued executive compensation	\$ -	\$ 175	\$ -
Reclassification of deposits to property and equipment	\$ 46,711	\$ 1,449	\$ -
Construction in progress included in accrued expenses	\$ 2,423	\$ -	\$ -
Cryptocurrencies received from sale of equipment	\$ -	\$ 52	\$ -
Conversion of preferred stock to common stock	\$ 11	\$ -	\$ 47
Conversion of notes payable to common stock	\$ -	\$ -	\$ 10,226
Reclassification of warrant liability to equity	\$ -	\$ -	\$ 5,439
Common stock issued in connection with conversion of notes payable	\$ -	\$ -	\$ 255
Cryptocurrencies used to purchase miners	\$ -	\$ -	\$ 99

See Accompanying Notes to Consolidated Financial Statements

Riot Blockchain, Inc. and Subsidiaries
Notes to Consolidated Financial Statements
(in thousands, except for share and per share amounts)

Note 1. Organization

Nature of Operations:

We are a vertically integrated Bitcoin mining and infrastructure development company principally engaged in enhancing our capabilities to mine Bitcoin. We also provide the critical mining infrastructure for our institutional scale clients to mine Bitcoin at our Bitcoin mining facility (the “Whinstone Facility”). Our Whinstone Facility is believed to be the largest Bitcoin mining facility, as measured by developed capacity, in North America.

We operate in an environment which is consistently evolving based on the proliferation of Bitcoin and cryptocurrencies in general. A significant component of our strategy is to effectively and efficiently allocate capital between opportunities that generate the highest return on our capital.

As described in “Note 18, Segment Information”, we operate in three business segments: (1) Mining, (2) Hosting, and (3) Engineering.

Note 2. Liquidity and Financial Condition

The Company has experienced historical losses and negative cash flows from operations. At December 31, 2021, the Company had approximate balances of cash and cash equivalents of \$312.3 million, working capital of \$463.7 million, total stockholders’ equity of \$1.4 billion and an accumulated deficit of \$237.8 million. To date, the Company has, in large part, relied on equity financings to fund its operations. The Company believes its current cash on hand is sufficient to meet its operating and capital requirements for at least the next year from the date these financial statements are issued.

During the year ended December 31, 2021, the Company paid approximately \$274.8 million as deposits primarily for miners and as of December 31, 2021, reclassified \$46.7 million to property and equipment in connection with the receipt of 23,864 miners received at the Coinmint Facility or the Whinstone Facility. As of December 31, 2021, approximately \$301.3 million remains payable to Bitmain in installments in advance of shipment of additional miners, which is scheduled to occur on a monthly basis through December 2022.

2021 ATM Offering

As disclosed in Note 12, “Stockholders’ Equity”, the Company entered into a Sales Agreement with Cantor Fitzgerald & Co., B. Riley FBR, Inc., BTIG, LLC, Compass Point Research & Trading, LLC and Roth Capital Partners, LLC (the “Sales Agents”) dated August 31, 2021 (the “Sales Agreement”), pursuant to which the Company may, from time to time, sell up to \$600 million in shares of the Company’s common stock through the Sales Agents, acting as the Company’s sales agent and/or principal, in a continuous at-the-market offering (the “2021 ATM Offering”). The Company paid the Sales Agents a commission of up to 3.0% of the aggregate gross proceeds the Company received from all sales of the Company’s common stock under the Sales Agreement. The Company received net proceeds on sales of 19,910,589 shares of common stock under the Sales Agreement of approximately \$587.2 million (after deducting \$12.8 million in commissions and expenses) at a weighted average price of \$29.53 from August 31, 2021 to December 31, 2021. With the sale and issuance of these shares, all \$600 million in shares of the Company’s common stock registered under the December 2021 Registration Statement had been issued and the Company completed the 2021 ATM Offering.

COVID-19:

The COVID-19 global pandemic has been unprecedented and unpredictable and its impact is likely to continue to result in significant national and global economic disruption, which may adversely affect our business. Although the Company has experienced some changes to its miner shipments due to disruptions in the global supply chain, the Company however does not expect any material impact on its long-term strategic plans, its operations, or its liquidity due to the impacts of COVID-19. However, the Company is actively monitoring this situation and the possible effects on its financial condition, liquidity, operations, suppliers, and the industry.

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Note 3. Basis of Presentation, Summary of Significant Accounting Policies and Recent Accounting Pronouncements

Basis of presentation and principles of consolidation

The accompanying consolidated financial statements of the Company include the accounts of the Company and its wholly or majority owned and controlled subsidiaries. Consolidated subsidiaries results are included from the date the subsidiary was formed or acquired. Intercompany investments, balances and transactions have been eliminated in consolidation. Non-controlling interests represents the minority equity investment in the Company's subsidiaries, plus the minority investors' share of the net operating results and other components of equity relating to the non-controlling interest.

The accompanying audited consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. They include the results of operations and financial condition of Whinstone beginning on May 26, 2021 and ESS Metron on December 1, 2021. See Note 4, "Acquisitions", for additional information on our acquisitions of Whinstone and ESS Metron. All intercompany balances and transactions have been eliminated in consolidation. Amounts are in thousands except for share, per share and miner amounts.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the balance sheet and the reported amounts of revenue and expenses during the reporting periods. Actual results could differ significantly from those estimates. The most significant accounting estimates inherent in the preparation of the Company's financial statements include estimates associated with valuing contingent consideration for a business combination and periodic reassessment of its fair value, allocating the fair value of purchase consideration to assets acquired and liabilities assumed in business acquisitions, revenue recognition, valuing the derivative asset classified under Level 3 fair value hierarchy, determining the useful lives and recoverability of long-lived assets, impairment analysis of goodwill and finite-lived intangibles, stock-based compensation, and the valuation allowance associated with the Company's deferred tax assets.

Reclassifications

Certain prior period amounts have been reclassified to conform to the current period presentation. The reclassifications did not have a material impact on the Company's consolidated financial statements and related disclosures. The impact on any prior period disclosures was immaterial.

Cash and cash equivalents

The Company considers all highly liquid investments with an original maturity of three months or less at the date of acquisition to be cash equivalents. From time to time, the Company's cash account balances exceed the balances as covered by the Federal Deposit Insurance System. The Company has never suffered a loss due to such excess balances. As of December 31, 2021 and 2020, the Company had no cash equivalents.

Riot Blockchain, Inc. and Subsidiaries
Notes to Consolidated Financial Statements
(in thousands, except for share and per share amounts)

Accounts Receivable, net

The Company's accounts receivable balance consists of amounts due from its hosting and engineering customers. The Company records accounts receivable at the invoiced amount less an allowance for any potentially uncollectable accounts under the current expected credit loss ("CECL") impairment model under ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326), Measurement of Credit Losses on Financial Assets*, and presents the net amount of the financial instrument expected to be collected. The CECL impairment model requires an estimate of expected credit losses, measured over the contractual life of an instrument, that considers forecasts of future economic conditions in addition to information about past events and current conditions. Based on this model, the Company considers many factors, including the age of the balance, collection history, and current economic trends. Bad debts are written off after all collection efforts have ceased.

Allowance for credit losses are recorded as a direct reduction from an asset's amortized cost basis. Credit losses and recoveries are recorded in selling, general and administrative expenses in the consolidated statements of operations. Recoveries of financial assets previously written off are recorded when received. For the years ended December 31, 2021, 2020 and 2019, the Company did not record any credit losses or recoveries.

Based on the Company's current and historical collection experience, management recorded an allowance for doubtful accounts of less than \$0.1 million as of December 31, 2021. There were no accounts receivable as of December 31, 2020.

No individual customer accounted for more than 7.5% of revenue for the year ended December 31, 2021. As of December 31, 2021, seven customers accounted for more than 83% of accounts receivable.

Long-term investments

Effective January 1, 2018, the Company adopted Accounting Standards Update ("ASU") 2016-01 and related ASU 2018-03 concerning recognition and measurement of financial assets and financial liabilities. In adopting this new guidance, the Company has made an accounting policy election to adopt an adjusted cost method measurement alternative for investments in equity securities without readily determinable fair values.

For equity investments that are accounted for using the measurement alternative, the Company initially records equity investments at cost but is required to adjust the carrying value of such equity investments through earnings when there is an observable transaction involving the same or a similar investment with the same issuer or upon an impairment.

Revenue recognition

Mining

The Company recognizes revenue under ASC 606, *Revenue from Contracts with Customers*. The core principle of the revenue standard is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. The following five steps are applied to achieve that core principle:

- Step 1: Identify the contract with the customer
- Step 2: Identify the performance obligations in the contract
- Step 3: Determine the transaction price
- Step 4: Allocate the transaction price to the performance obligations in the contract
- Step 5: Recognize revenue when the Company satisfies a performance obligation

In order to identify the performance obligations in a contract with a customer, a company must assess the promised goods or services in the contract and identify each promised good or service that is distinct. A performance obligation meets ASC 606's definition of a "distinct" good or service (or bundle of goods or services) if both of the following criteria are met: The customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer (i.e., the good or service is capable of being distinct), and the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract (i.e., the promise to transfer the good or service is distinct within the context of the contract).

If a good or service is not distinct, the good or service is combined with other promised goods or services until a bundle of goods or services is identified that is distinct.

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The transaction price is the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer. The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both. When determining the transaction price, an entity must consider the effects of all of the following:

- Variable consideration
- Constraining estimates of variable consideration
- The existence of a significant financing component in the contract
- Noncash consideration
- Consideration payable to a customer

Variable consideration is included in the transaction price only to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. The transaction price is allocated to each performance obligation on a relative standalone selling price basis. The transaction price allocated to each performance obligation is recognized when that performance obligation is satisfied, at a point in time or over time as appropriate.

The Company has entered into digital asset mining pools by executing contracts, as amended from time to time, currently with one mining pool operator, with the mining pool operators to provide computing power to the mining pool. The contracts are terminable at any time by either party and the Company's enforceable right to compensation only begins when the Company provides computing power to the mining pool operator. In exchange for providing computing power, the Company is entitled to a fractional share of the fixed cryptocurrency award the mining pool operator receives (less digital asset transaction fees to the mining pool operator which are immaterial and are recorded as a deduction from revenue), for successfully adding a block to the blockchain. The terms of the agreement provide that neither party can dispute settlement terms after thirty-five days following settlement. The Company's fractional share is based on the proportion of computing power the Company contributed to the mining pool operator to the total computing power contributed by all mining pool participants in solving the current algorithm.

Providing computing power in digital asset transaction verification services is an output of the Company's ordinary activities. The provision of providing such computing power is the only performance obligation in the Company's contracts with mining pool operators. The transaction consideration the Company receives, if any, is noncash consideration, which the Company measures at fair value on the date received, which is not materially different than the fair value at contract inception or the time the Company has earned the award from the pools. The consideration is all variable. Because it is not probable that a significant reversal of cumulative revenue will not occur, the consideration is constrained until the mining pool operator successfully places a block (by being the first to solve an algorithm) and the Company receives confirmation of the consideration it will receive, at which time revenue is recognized. There is no significant financing component in these transactions.

Fair value of the cryptocurrency award received is determined using the quoted price of the related cryptocurrency at the time of receipt.

Hosting

In general, we provide power for our data center customers on a variable (sub-metered) basis. A customer pays us variable monthly fees for the specific amount of power utilized at rates specified in each contract, subject to certain minimums. We recognize variable power revenue each month as the uncertainty related to the consideration is resolved, power is provided to our customers, and our customers utilize the power (the customer simultaneously receives and consumes the benefits of the Company's performance).

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We have determined that our contracts contain a series of performance obligations which qualify to be recognized under a practical expedient available known as the “right to invoice.” This determination allows variable consideration in such contracts to be allocated to and recognized in the period to which the consideration relates, which is typically the period in which it is billed, rather than requiring estimation of variable consideration at the inception of the contract. We have also determined that the contracts contain a significant financing component because the timing of revenue recognition differs from the timing of invoicing by a period, exceeding one year.

The Company also installs certain hosted customers’ mining equipment and bills the customer at a fixed fee per piece of equipment or at an hourly rate. Revenue is recognized upon completion of the installation.

We generate engineering and construction services revenue from the fabrication and deployment of immersion cooling technology for Bitcoin mining customers. We bill the customer at a fixed monthly fee or at an hourly rate. For the construction of customer-owned equipment, revenue is recognized upon completion of each phase of the construction project, as defined in each contract. For construction of assets owned by Whinstone but paid for and used by the customer during the term of their hosting contract, revenue is recognized on a straight-line basis over the remaining life of the contract.

Maintenance services include cleaning, cabling and other services to maintain the customers’ equipment. We bill the customer at a fixed monthly fee or at an hourly rate. Revenue is recognized as these services are provided.

Deferred revenue is primarily from advance payments received and is recognized on a straight-line basis over the remaining life of the contract or upon completion of the installation of the customers’ equipment.

Our primary hosting contracts contain Service Level Agreement clauses, which guarantee a certain percentage of time the power will be available to our customer. In the rare case that we may incur penalties under these clauses, we account for payments made to customers in accordance with ASC 606-10-32-25, *Consideration Payable to a Customer*, which requires the payment be recognized as variable consideration and a reduction of the transaction price and, therefore, of revenue, when not in exchange for a good or service from the customer.

Engineering

Substantially all revenue is derived from the sale of custom products built to customers’ specifications under fixed-price contracts with one identified performance obligation. Revenues are recognized over time as performance creates or enhances an asset with no alternative use, and for which the Company has an enforceable right to receive compensation as defined under the contract.

To determine the amount of revenue to recognize over time, the Company utilizes the cost-to-cost method as management believes cost incurred best represents the amount of work completed and remaining on projects. As the cost-to-cost method is driven by incurred cost, the Company calculates the percentage of completion by dividing costs incurred to date by the total estimated cost. The percentage of completion is then multiplied by estimated revenues to determine inception-to-date revenue. Approved changes to design plans are generally recognized as a cumulative adjustment to the percentage of completion calculation. Revenue recognized for the period is the current inception-to-date recognized revenue less the prior period inception-to-date recognized revenue. If a contract is projected to result in a loss, the entire contract loss is recognized in the period when the loss was first determined, and any additional losses incurred subsequently are recognized in the subsequent reporting periods as they are identified. Additionally, contract costs incurred to date and expected total contract costs are continuously monitored during the term of the contract.

Riot Blockchain, Inc. and Subsidiaries
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Changes in the job performance, job conditions and final contract settlements are factors that influence management's assessment of total contract value and the total estimated costs to complete those contracts, and therefore, profit and revenue recognition. Any costs to obtain a contract are not material to the Company's financial statements and would be expensed as incurred. Because of the inherent uncertainties in estimating costs, it is at least reasonably possible that the estimates used will change within the near term. The length of time for the Company to complete a custom product varies but is typically between four to 12 weeks.

Customers are typically required to make periodic progress payments to the Company based on contractually agreed-upon milestones. Invoices are due net, 30 days, and retainage, if any, is generally due 30 days after delivery. Taxes collected from customers and remitted to governmental authorities are excluded from revenue. Shipping and handling costs are treated as fulfillment costs and are included in cost of sales.

Other Revenue

Other revenue is revenue recognized from an upfront license fee generated from our legacy animal health business. The upfront fee was recorded as deferred revenue and is being amortized into revenue over the term of the License Agreement.

Derivative Accounting

Power Supply Contract and Demand Response Services

In May 2020, Whinstone entered into a Power Supply Agreement with TXU Energy Retail Company LLC ("TXU") to provide the delivery of a fixed amount of electricity by TXU to Whinstone (via the facility owned by Oncor Electric Delivery Company, LLC ("Oncor")) for a fixed price through April 30, 2030. The Power Supply Agreement provides a consistent and sufficient supply of electricity at the Whinstone Facility. If Whinstone uses more electricity than contracted, the cost of the excess is incurred at the current spot rate. Concurrently, Whinstone entered into a contract with Oncor for the extension of delivery system transmission/substation facilities to facilitate delivery of the electricity to the Whinstone Facility (the "Facilities Agreement"). Power costs incurred under this contract are determined on an hourly basis using settlement information provided by the Electric Reliability Council of Texas ("ERCOT") and are recorded in cost of revenues - data center hosting in the consolidated statements of operations.

The demand response services program ("Demand Response Service") provides the ERCOT market with valuable reliability and economic services by helping to preserve system reliability, enhancing competition, mitigating price spikes, and encouraging the demand side of the market to respond better to wholesale price signals. In collaboration with market participants such as the Company, ERCOT has developed demand response products and services for customers that have the ability to reduce or modify electricity use in response to instructions or signals. Market participants with electrical loads like Whinstone may participate in the Demand Response Service program directly by offering their electrical loads into the ERCOT markets, or indirectly by voluntarily reducing their energy usage in response to increasing wholesale prices.

Depending on the spot market price of electricity, under this program, we opportunistically sell electricity back to ERCOT in exchange for cash payments, rather than providing the power to our customers during these peak times in order to most efficiently manage our operating costs. We sold approximately \$6.5 million in electricity back to ERCOT during the period from May 26, 2021 (the "Acquisition Date") through December 31, 2021. These sales back to ERCOT are recorded as part of the change in fair value of derivative asset in the consolidated statements of operations.

While we manage operating costs at the Whinstone Facility in part by periodically selling unused or uneconomical power in the market back to ERCOT, we do not consider such actions trading activities. That is, we do not engage in speculation in the power market as part of our ordinary activities. Because the Demand Response Services programs allow for net settlement, we have determined the Power Supply Agreement meets the definition of a derivative under ASC 815, *Derivatives and Hedging*, ("ASC 815"). However, because we have the ability to sell the power back to the grid rather than take physical delivery, physical delivery is not probable through the entirety of the contract and therefore, we do not believe the normal purchases and normal sales scope exception applies to the Power Supply Agreement. Accordingly, the Power Supply Agreement (the non-hedging derivative contract) is recorded at estimated fair value each reporting period with the change in the fair value recorded in change in fair value of derivative asset in the consolidated statements of operations.

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In February 2021, the State of Texas experienced an extreme and unprecedented winter weather event that resulted in prolonged freezing temperatures and caused an electricity generation shortage that was severely disruptive to the whole state. While demand for electricity reached extraordinary levels due to the extreme cold, the supply of electricity significantly decreased in part because of the inability of certain power generation facilities to supply electric power to the grid. Due to the extreme market price of electricity during this time, at the request of ERCOT, Whinstone stopped supplying power to its customers and instead sold power back to the grid.

In April 2021, under the provisions of the TXU Power Supply Agreement, and as a result of the weather event, Whinstone entered into a Qualified Scheduling Entity (“QSE”) Letter Agreement, which resulted in Whinstone being entitled to receive approximately \$125.1 million for its power sales during the February winter storm, all under the terms and conditions of the QSE Letter Agreement. Whinstone received cash of \$29.0 million in April 2021 (after deducting \$10.0 million in power management fees owed by Whinstone), approximately \$59.7 million is scheduled to be credited against future power bills of Whinstone beginning in 2022 and the remaining \$26.3 million is contingent upon ERCOT’s future remittance. These amounts are gross before fair value adjustments and expenses incurred by Whinstone for power management fees noted above and customer settlements. The fair value of the settlement agreement was estimated and recognized as an asset as part of acquisition accounting. Additionally, pursuant to the Northern Data stock purchase agreement, the Company agreed to pay Seller additional consideration in cash in the amount of the future power credits, net of income taxes, when and if realized by Whinstone. See Note 4, “Acquisitions”.

Fair Value Measurement

The Company follows the accounting guidance in ASC 820, *Fair Value Measurement*, (“ASC 820”) for its fair value measurements of financial assets and liabilities measured at fair value on a recurring basis. Under this accounting guidance, fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or a liability.

The accounting guidance requires fair value measurements be classified and disclosed in one of the following three categories:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Observable inputs other than Level 1 prices, for similar assets or liabilities that are directly or indirectly observable in the marketplace.

Level 3: Unobservable inputs which are supported by little or no market activity and that are financial instruments whose values are determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant judgment or estimation.

The fair value hierarchy also requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement.

The Company’s derivative asset related to its Power Supply Agreement is classified within Level 3 of the fair value hierarchy because the fair value is estimated by utilizing valuation models and significant unobservable inputs. The Company’s only financial liability based on Level 3 inputs is a contingent consideration arrangement related to its acquisition of Whinstone. The Company is contractually obligated to pay contingent consideration payments to the Seller if Whinstone realizes certain power credits. (See Note 14, “Fair Value Measurement”)

The Company will update its assumptions each reporting period based on new developments and record such amounts at fair value based on the revised assumptions until the agreements expire or contingency is resolved, as applicable.

As of December 31, 2020, there were no financial assets or liabilities measured at fair value.

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Property and Equipment

Property and equipment is stated at cost and depreciated using the straight-line method over the estimated useful lives of the assets. Estimated useful lives for leasehold improvements are typically the lesser of the estimated useful life of the asset or the life of the term of the lease. The estimated useful lives for all other property and equipment are as follows:

	<u>Life (Years)</u>
Buildings and improvements	10-25
Miners and mining equipment	2
Machinery and facility equipment	5-7
Office and computer equipment	3

Goodwill and Other Intangible Assets

The Company accounts for intangible assets under ASC 350-30, *Intangibles – Goodwill and Other*. Goodwill represents the cost of a business acquisition in excess of the fair value of the net assets acquired. The Company determined that it has three reporting units for goodwill impairment testing purposes, Mining, Hosting, and Engineering, which is consistent with internal management reporting and management’s oversight of operations. Goodwill is not amortized and is reviewed for impairment annually as of December 31 or more frequently if facts and circumstances indicate that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill. We use both qualitative and quantitative analyses in making this determination. Our analyses require significant assumptions and judgments, including assumptions about future economic conditions, revenue growth, and operating margins, among other factors. Example events or changes in circumstances considered in the qualitative analysis, many of which are subjective in nature, include: a significant negative trend in our industry or overall economic trends, a significant change in how we use the acquired assets, a significant change in or our business strategy, a significant decrease in the market value of the asset, a significant change in regulations or in the industry that could affect the value of the asset, and a change in segments. If it is more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company performs the quantitative test to identify and measure the amount of goodwill impairment loss. The Company compares the fair value of the reporting unit with its carrying amount. If the carrying amount exceeds the fair value, goodwill of the reporting unit is considered impaired and that excess is recognized as a goodwill impairment loss.

Intangible assets with finite lives are comprised of customer contracts, trademarks, UL Listings and patents that are amortized on a straight-line basis over their expected useful lives, which is their contractual term or estimated useful life. Patents costs consisting of filing and legal fees incurred are initially recorded at cost. Certain patents are in the legal application process and therefore are not currently being amortized. The Company performs assessments to determine whether finite-lived classification is still appropriate at least annually. The carrying value of finite-lived assets and their remaining useful lives are also reviewed at least annually to determine if circumstances exist which may indicate a potential impairment or revision to the amortization period. A finite-lived intangible asset is considered to be impaired if its carrying value exceeds the estimated future undiscounted cash flows to be derived from it. We exercise judgment in selecting the assumptions used in the estimated future undiscounted cash flows analysis. Impairment is measured by the amount that the carrying value exceeds fair value.

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The use of different estimates or assumptions could result in significantly different fair values for our reporting units and intangible assets.

As of December 31, 2021, the carrying amounts and estimated lives of the Company's intangible assets with finite lives were as follows:

<i>(\$ in thousands)</i>	Gross book value	Accumulated amortization	Net book value	Weighted-average life (years)
Customer contracts	\$ 6,300	\$ (51)	\$ 6,249	10
Trademark	5,000	(42)	4,958	10
UL Listings	2,700	(19)	2,681	12
Patents	742	(468)	274	Various
Finite-lived intangible assets	\$ 14,742	\$ (580)	\$ 14,162	

As of December 31, 2020, the carrying amounts of the Company's intangible assets with finite lives were as follows:

	Gross book value	Accumulated amortization	Net book value
Patents	\$ 713	\$ (377)	\$ 336

The following table represents the total estimated amortization of intangible assets for the five succeeding years:

For the years ending December 31,	Estimated amortization expense
2022	\$ 1,446
2023	1,446
2024	1,446
2025	1,446
2026	1,446
Thereafter	6,932
Total	\$ 14,162

We did not identify any impairment of our Goodwill and Other Intangible Assets during the years ended December 31, 2021, 2020 and 2019 other than our cryptocurrencies discussed below.

Cryptocurrencies

Cryptocurrencies, (including Bitcoin and Bitcoin cash) are included in current assets in the accompanying consolidated balance sheets. Cryptocurrencies purchased are recorded at cost and cryptocurrencies awarded to the Company through its mining activities are accounted for in connection with the Company's revenue recognition policy disclosed above.

Cryptocurrencies held are accounted for as intangible assets with indefinite useful lives. An intangible asset with an indefinite useful life is not amortized but assessed for impairment annually, or more frequently, when events or changes in circumstances occur indicating that it is more likely than not that the indefinite-lived asset is impaired. Impairment exists when the carrying amount exceeds its fair value, which is measured using the quoted price of the cryptocurrency at the time its fair value is being measured. In testing for impairment, the Company has the option to first perform a qualitative assessment to determine whether it is more likely than not that an impairment exists. If it is determined that it is not more likely than not that an impairment exists, a quantitative impairment test is not necessary. If the Company concludes otherwise, it is required to perform a quantitative impairment test. To the extent an impairment loss is recognized, the loss establishes the new cost basis of the asset. Subsequent reversal of impairment losses is not permitted. During 2021, 2020 and 2019, the Company recorded impairment charges on its cryptocurrency holdings of \$36.5 million, \$1.0 million and \$0.8 million, respectively.

Purchases of cryptocurrencies by the Company are included within investing activities in the accompanying consolidated statements of cash flows, while cryptocurrencies awarded to the Company through its mining activities are included within operating activities in the accompanying consolidated statements of cash flows. The sales of cryptocurrencies are included within investing activities in the accompanying consolidated statements of cash flows and any realized gains or losses from such sales are included in other income (expense) in the consolidated statements of operations. The Company accounts for its gains or losses in accordance with the first in first out (FIFO) method of accounting.

Impairment of long-lived assets

Management reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to undiscounted future cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets.

During the year ended December 31, 2020, the Company determined there were indicators that would cause a 100% impairment of its Coinsquare investment and observed price changes. Therefore, the Company recorded an impairment expense of \$9.4 million for its investment in Coinsquare during the year ended December 31, 2020.

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Business Combinations

The Company applies the provisions of ASC Topic 805, *Business Combinations*, (“ASC 805”) in the accounting for acquisitions of businesses. ASC 805 requires us to use the acquisition method of accounting by recognizing the identifiable tangible and intangible assets acquired and liabilities assumed, and any non-controlling interest in the acquired business, measured at their acquisition date fair values. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the aforementioned amounts. Contingent consideration is included within the purchase price and is recognized at its fair value on the acquisition date. A liability resulting from contingent consideration is remeasured to fair value as of each reporting date until the contingency is resolved, and subsequent changes in fair value are recognized in earnings. Contingent consideration is recorded in long-term liabilities in our consolidated balance sheets.

While we use our best estimates and assumptions to accurately apply preliminary values to assets acquired and liabilities assumed at the acquisition date as well as contingent consideration, where applicable, these estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of the assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded in the consolidated statements of operations.

Accounting for business combinations requires management to make significant estimates and assumptions, especially at the acquisition date, including estimates for intangible assets, contractual obligations assumed, pre-acquisition contingencies, and contingent consideration, where applicable. Although we believe the assumptions and estimates we have made have been reasonable and appropriate, they are based in part on historical experience and information obtained from management of the acquired companies and are inherently uncertain. Critical estimates in valuing certain of the intangible assets we have acquired include; future expected cash flows from customer contracts, discount rates, and estimated market changes in the value of the Power Supply Agreement, which is accounted for as a nonhedged derivative contract. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates, or actual results.

Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

Investment in marketable equity securities

Our investment in marketable equity securities consists entirely of common shares of Mogo, Inc. (NASDAQ: MOGO), resulting from the April and May 2021 transactions. (See Note 7, “Investments in Marketable Equity Securities”). The Company accounted for this investment in accordance with ASC 321, *Investments-Equity Securities*, (“ASC 321”) due to the shares having a readily determinable fair value since they are traded on NASDAQ and have significant average daily volume traded. As a result, the investment is required to be measured at fair value at each balance sheet date with unrealized holding gains and losses recorded in other income (expense).

Lease Accounting

The Company accounts for its leases under ASC 842, *Leases* (“ASC 842”). Accordingly, the Company determines whether an arrangement contains a lease at the inception of the arrangement. If a lease is determined to exist, the term of such lease is assessed based on the date on which the underlying asset is made available for the Company’s use by the lessor. The Company’s assessment of the lease term reflects the non-cancelable term of the lease, inclusive of any rent-free periods and/or periods covered by early-termination options which the Company is reasonably certain of not exercising, as well as periods covered by renewal options which the Company is reasonably certain of exercising. The Company also determines lease classification as either operating or finance at lease commencement, which governs the pattern of expense recognition and the presentation reflected in the consolidated statements of operations over the lease term.

For leases with a term exceeding 12 months, a lease liability is recorded on the Company’s consolidated balance sheet at lease commencement reflecting the present value of its fixed minimum payment obligations over the lease term. A corresponding right-of-use (“ROU”) asset equal to the initial lease liability is also recorded, adjusted for any prepaid rent and/or initial direct costs incurred in connection with execution of the lease and reduced by any lease incentives received. For purposes of measuring the present value of its fixed payment obligations for a given lease, the Company uses its incremental borrowing rate, determined based on information available at lease commencement, as rates implicit in its leasing arrangements are typically not readily determinable. The Company’s incremental borrowing rate reflects the rate it would pay to borrow on a secured basis and incorporates the term and economic environment of the associated lease.

For the Company’s operating leases, fixed lease payments are recognized as lease expense on a straight-line basis over the lease term. For leases with a term of 12 months or less, any fixed lease payments are recognized on a straight-line basis over the lease term and are not recognized on the Company’s consolidated balance sheet as an accounting policy election. Leases qualifying for the short-term lease exception were insignificant. Variable lease costs are recognized as incurred.

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Segment and Reporting Unit Information

Operating segments are defined as components of an entity for which discrete financial information is available that is regularly reviewed by the Chief Operating Decision Maker (“CODM”) in deciding how to allocate resources to an individual segment and in assessing performance. A committee consisting of the Company’s executives is determined to be the CODM. The Company has three operating segments as of December 31, 2021. See Note 18, “Segment Information”.

Income Taxes

The Company accounts for income taxes under the asset and liability method, in which deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carry forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operations in the period that includes the enactment date. A valuation allowance is required to the extent any deferred tax assets may not be realizable.

ASC Topic 740, *Income Taxes*, (“ASC 740”), also clarifies the accounting for uncertainty in income taxes recognized in an enterprise’s financial statements and prescribes a recognition threshold and measurement process for financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. ASC 740 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition. Based on the Company’s evaluation, it has been concluded that there are no significant uncertain tax positions requiring recognition in the Company’s consolidated financial statements. The Company believes that its income tax positions and deductions would be sustained on audit and does not anticipate any adjustments that would result in material changes to its financial position.

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Deferred Revenue

The Company recognized deferred revenue related to its acquisition of Whinstone, which consists primarily of advance payments received, and is recognized on a straight-line basis over the remaining life of the contract or upon completion of the installation of the customers' equipment.

The Company recognized upfront license fees from Ceva Santé Animale S.A. ("Licensee") related to its exclusive license agreement ("License Agreement"), which have been recorded as deferred revenue and are being amortized over the term of the License Agreement. Amortization of the license fees totaling approximately \$1.6 million began in July 2012.

Contract assets consist of costs and estimated earnings in excess of billings on uncompleted contracts and unearned revenue consists of billings in excess of costs and estimated earnings on uncompleted contracts.

Cost of Revenues

- Mining: Cost of revenues consists primarily of direct production costs of mining operations, including electricity, labor, insurance and, in 2020, rent for the Oklahoma City facility and, in 2021, the variable Coinmint hosting fee, but excluding depreciation and amortization which are separately stated.
- Hosting: Cost of revenues consists primarily of direct power costs, rent and compensation costs.
- Engineering: Cost of revenues consists primarily of direct materials and labor, as well as indirect manufacturing costs.

Stock-based Compensation

The Company accounts for share-based payment awards exchanged for services at the estimated grant date fair value of the award. Stock options issued under the Company's long-term incentive plans are granted with an exercise price equal to no less than the market price of the Company's stock at the date of grant and expire up to ten years from the date of grant. These options generally vest on the grant date or over a one- year period.

The Company estimates the fair value of stock option grants using the Black-Scholes option pricing model and the assumptions used in calculating the fair value of stock-based awards represent management's best estimates and involve inherent uncertainties and the application of management's judgment.

Expected Term - The expected term of options represents the period that the Company's stock-based awards are expected to be outstanding based on the simplified method, which is the half-life from vesting to the end of its contractual term.

Expected Volatility - The Company computes stock price volatility over expected terms based on its historical common stock trading prices.

Risk-Free Interest Rate - The Company bases the risk-free interest rate on the implied yield available on U. S. Treasury zero-coupon issues with an equivalent remaining term.

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Expected Dividend - The Company has never declared or paid any cash dividends on its common shares and does not plan to pay cash dividends in the foreseeable future, and, therefore, uses an expected dividend yield of zero in its valuation models.

The Company elected to account for forfeited awards as they occur, as permitted by ASU 2016-09, *Compensation – Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* (“ASU 2016-09”). Ultimately, the actual expenses recognized over the vesting period will be for those shares that vested.

Income (loss) Per Share

Basic net income (loss) per share (“EPS”) of common stock is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted EPS reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised or converted into common stock or resulted in the issuance of common stock that then shared in the earnings of the entity. The Company excludes its unvested restricted share units (“RSUs”) and the holdback of 70,165 shares as security for the ESS Metron sellers’ indemnification obligations under the membership interest purchase agreement from the net loss per share calculation.

Since the Company has only incurred losses, basic and diluted net loss per share is the same. Securities that could potentially dilute loss per share in the future were not included in the computation of diluted loss per share at December 31, 2021, 2020 and 2019 because their inclusion would be anti-dilutive as follows:

	December 31,		
	2021	2020	2019
Warrants to purchase common stock	63,000	2,061,770	3,574,257
Options to purchase common stock	-	12,000	12,000
Unvested restricted stock awards	4,015,146	633,305	1,524,499
Convertible Series B preferred shares	2,199	4,199	4,199
Total	<u>4,080,345</u>	<u>2,711,274</u>	<u>5,114,955</u>

Recently Issued and Adopted Accounting Pronouncements

The Company continually assesses any new accounting pronouncements to determine their applicability. When it is determined that a new accounting pronouncement affects the Company’s financial reporting, the Company undertakes a study to determine the consequences of the change to its consolidated financial statements and assures that there are proper controls in place to ascertain that the Company’s consolidated financial statements properly reflect the change.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which was codified with its subsequent amendments as ASC 326, *Financial Instruments – Credit Losses*. ASC 326 seeks to provide financial statement users with more decision-useful information about the expected credit losses on financial instruments, including trade receivables, and other commitments to extend credit held by a reporting entity at each reporting date. The amendments require an entity to replace the incurred loss impairment methodology in other U.S. GAAP with a methodology that reflects current expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The updated guidance is effective for the Company for annual reporting periods beginning after December 15, 2022, and early adoption is permitted. In connection with the Company’s acquisitions during the year ended December 31, 2021, the Company adopted this standard on January 1, 2021 and the adoption did not have a material impact on the financial statements and related disclosures.

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In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (“ASU 2019-12”), which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020, with early adoption permitted. The Company adopted this standard on January 1, 2020 and the adoption did not have a material impact on the financial statements and related disclosures.

In May 2021, the FASB issued ASU 2021-04, *Earnings Per Share (Topic 260), Debt-Modifications and Extinguishments (Subtopic 470-50), Compensation-Stock Compensation (Topic 718), and Derivatives and Hedging-Contracts in Entity’s Own Equity (Subtopic 815-40)*, (“ASU 2021-04”). This ASU reduces diversity in an issuer’s accounting for modifications or exchanges of freestanding equity-classified written call options (for example, warrants) that remain equity classified after modification or exchange. This ASU provides guidance for a modification or an exchange of a freestanding equity-classified written call option that is not within the scope of another Topic. It specifically addresses: (1) how an entity should treat a modification of the terms or conditions or an exchange of a freestanding equity-classified written call option that remains equity classified after modification or exchange; (2) how an entity should measure the effect of a modification or an exchange of a freestanding equity-classified written call option that remains equity classified after modification or exchange; and (3) how an entity should recognize the effect of a modification or an exchange of a freestanding equity-classified written call option that remains equity classified after modification or exchange. This ASU will be effective for all entities for fiscal years beginning after December 15, 2021. An entity should apply the amendments prospectively to modifications or exchanges occurring on or after the effective date of the amendments. Early adoption is permitted, including adoption in an interim period. The adoption of ASU 2021-04 on January 1, 2022 did not have a material impact on the Company’s financial statements or disclosures.

Note 4. Acquisitions

Acquisition of ESS Metron

On December 1, 2021, the Company acquired 100% of the equity interests of ESS Metron. ESS Metron is based in Denver, Colorado, operating from facilities totaling approximately 121,000 square feet. The facilities are subject to long-term lease agreements.

The acquisition-date fair value of the total consideration transferred was comprised of \$25 million of cash, adjusted for net working capital and other items, and 715,413 shares of the Company’s common stock, no par value, with a fair value of approximately \$26.7 million. Of the 715,413 shares of common stock, 645,248 were issued upon closing, and the remaining 70,165 were withheld as security for the sellers’ indemnification obligations for 18 months following the transaction closing date.

The ESS Metron Acquisition was accounted for using the acquisition method of accounting in accordance with ASC 805, which requires recognition of assets acquired and liabilities assumed at their respective fair values on the date of acquisition. As of December 31, 2021, the Company has completed a preliminary allocation of the purchase consideration. Therefore, the allocation of the purchase price to assets acquired and liabilities assumed is based on provisional estimates and is subject to continuing management analysis, with assistance from third party valuation advisors. The Company expects to finalize the valuation of these assets and liabilities, and consideration transferred, as soon as practicable, but not later than one year from the acquisition date. Any changes to the preliminary estimates of the fair value of the assets acquired and liabilities assumed will be recorded as adjustments to those assets and liabilities and residual amounts will be allocated to goodwill.

During the period ended December 31, 2021, the Company continued reviewing its valuations of the assets acquired and liabilities assumed in the December 1, 2021 acquisition of ESS Metron based on new information obtained about facts and circumstances that existed as of the acquisition date.

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Any necessary adjustments will be finalized within one year from the date of acquisition (in thousands):

Cash and cash equivalents	\$ 549
Accounts receivable	9,879
Prepaid and other current assets	636
Inventory and work-in-progress	1,175
Costs and estimated earnings in excess of billings	13,205
Property and equipment	4,501
Intangible assets	14,000
Right of use asset	6,714
Accounts payable	(9,235)
Accrued expenses	(1,239)
Billings in excess of costs and estimated earnings	(5,883)
Operating lease liabilities	(6,714)
Warranty liability	(116)
Total identifiable assets and liabilities acquired	27,472
Goodwill	29,379
Total purchase consideration	\$ 56,851

The \$56.9 million total purchase price consideration consisted of \$26.7 million fair value of Riot common shares issued, a \$30.1 million cash payment (net of \$3.7 million of Seller transaction costs). Goodwill represents the excess of total purchase consideration over the preliminary fair value of the underlying assets acquired and liabilities assumed. Goodwill is attributable to the assembled workforce of experienced personnel at ESS Metron and synergies expected to be achieved from the combined operations of Riot and ESS Metron. The goodwill recognized is expected to be deductible for tax purposes. We assigned the goodwill to our Engineering segment. See Note 18, "Segment Information".

In accordance with ASC 815, the Company determined that the 70,165 shares withheld meet the conditions necessary to be classified as equity because the consideration is indexed to the Company's own equity, there are no exercise contingencies based on an observable market not based on its stock or operations, settlement is consistent with a fixed-for-fixed equity instrument, the agreement contains an explicit number of shares and there are no cash payment provisions. Additionally, based on these assessments, the Company determined the shares be recorded at fair value on the acquisition date similar to escrowed shares or securities and accounted for them in total consideration transferred. This consideration relates to representations and warranties of circumstances that existed as of the acquisition date and which the Company believes to be accurate, with future issuance of the share consideration deemed likely to occur.

The fair values of cash and cash equivalents, accounts receivable, prepaid and other current assets, inventory and work-in-progress, accounts payable, accrued expenses, and warranty liability were determined to be the carrying values due to the short-term nature of the assets and liabilities. The fair value of the acquired trade receivables was determined to be the net realizable amount of the closing date book value of \$9.9 million.

Contract assets consist of costs and estimated earnings in excess of billings on uncompleted contracts and unearned revenue consists of billings in excess of costs and estimated earnings on uncompleted contracts. The fair values of these assets and liabilities were determined to be the carrying values due to the short-term nature of the underlying project contracts incurring costs and the associated customer billings.

The fair value of property and equipment was estimated by applying the cost approach. The cost approach uses the replacement or reproduction cost as an indicator of fair value. The assumptions of the cost approach include replacement cost new, projected capital expenditures, and physical deterioration factors including economic useful life, remaining useful life, age, and effective age.

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Intangible assets reflect the identifiable intangible assets acquired, consisting of customer relationships, a trademark and UL Listings. Customer relationships are assigned an estimated useful life of approximately 10 years based on the low attrition of the customer base, in part due to the customized nature of the Company's products. Fair value of the customer relationships was estimated by applying an income approach – multi period excess earnings method. The fair value was determined by calculating the present value of estimated future operating cash flows generated from the existing customers less costs to realize the revenue. The Company applied a discount rate of 21%, which reflected the nature of the assets as they relate to the risk and uncertainty of the estimated future operating cash flows. Other significant assumptions used to estimate the fair value of the customer contracts include an assumed income tax rate of 25%.

Although ESS Metron has been in business for over 60 years, the trademark was only assigned a 10-year life due to the Company obtaining more data center customers where the longevity of the projects may be shorter than have been historically. Fair value of the trademark was estimated by applying the relief from royalty rate method. The fair value was determined by applying an estimated royalty rate to revenues, measuring the value the Company would pay in royalties to a market participant if it did not own the trademark and had to license it from a third party.

UL Listings were assigned a 12-year life. A UL Listing means that UL, LLC has tested representative samples of a product and determined that the product meets specific, defined requirements. These requirements are often based on UL's published and nationally recognized Standards for Safety. Although the UL Listing certifications do not expire, due to technological improvements in similar products, particularly in the data center industry, a 12-year life was assumed. Fair value of the UL Listings was estimated by applying an estimated developer's profit margin of approximately 4.5% to estimated costs to be incurred over an estimated six months to re-acquire the UL Listings. The Company applied a discount rate of 15%, which reflected the short time necessary to re-acquire the asset.

The right of use asset and operating lease liabilities consist of two operating leases of the manufacturing facility in Denver, CO. These leases have combined annual payments of approximately \$0.9 million and have remaining lease terms of approximately 3.5 and 10 years.

The operating results of ESS Metron have been included in the Company's consolidated statements of operations since the acquisition date. During the year ended December 31, 2021, the Company recognized \$2.1 million of acquisition-related costs that were expensed as incurred.

The financial results of the acquisition have been included in the Company's consolidated financial statements from the closing of the acquisition. From the December 1, 2021 acquisition date through December 31, 2021, ESS Metron's total revenue and net income was approximately \$4.2 million and \$0.2 million, respectively.

Acquisition of Whinstone

On May 26, 2021, the Company acquired 100% of the equity interests of Whinstone US, Inc., the owner and operator of a Bitcoin mining and hosting facility, for approximately \$460 million. The assets and operations of Whinstone increases the scale and scope of Riot's operations, which is a foundational element in the Company's strategy to become an industry-leading Bitcoin mining platform on a global scale.

The acquisition-date fair value of the total consideration transferred was comprised of \$80 million of cash, adjusted for net working capital and other items, and 11.8 million shares of the Company's common stock, no par value, with a fair value of approximately \$326 million. As part of cash at closing, net debt outstanding from Whinstone to its parent (Seller) totaling approximately \$38 million was repaid as part of cash paid and certain seller transaction costs were paid. The Company also agreed to pay Seller up to approximately \$86 million (undiscounted) in additional consideration if certain future power credits are realized by Whinstone.

The purchase price was funded through a combination of existing cash and issuance of equity securities.

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The Whinstone Acquisition was accounted for using the acquisition method of accounting in accordance with ASC 805, which requires recognition of assets acquired and liabilities assumed at their respective fair values on the date of acquisition. As of December 31, 2021, the Company has completed a preliminary allocation of the purchase consideration. Therefore, the allocation of the purchase price to assets acquired and liabilities assumed is based on provisional estimates and is subject to continuing management analysis, with assistance from third party valuation advisors. The Company expects to finalize the valuation of these assets and liabilities, and consideration transferred, as soon as practicable, but not later than one year from the Acquisition Date. Any changes to the preliminary estimates of the fair value of the assets acquired and liabilities assumed will be recorded as adjustments to those assets and liabilities and residual amounts will be allocated to goodwill.

During the period ended December 31, 2021, the Company continued reviewing its valuations of the assets acquired and liabilities assumed in the May 26, 2021 acquisition of Whinstone based on new information obtained about facts and circumstances that existed as of the acquisition date. During the period May 26, 2021 through December 31, 2021, due to further analysis of the operating forecast used in the acquisition date valuation, the Company recorded preliminary measurement period adjustments of approximately \$90.3 million to decrease the value of its customer relationship intangible assets, \$37.8 million to decrease the value of its acquisition date deferred tax liabilities and \$0.2 million to increase its acquisition date right of use asset, with the corresponding adjustments to goodwill.

Any necessary adjustments will be finalized within one year from the date of acquisition (\$ in thousands):

Cash and cash equivalents	\$	10,400
Accounts receivable		1,072
Prepaid expenses and other current assets		2,176
Property and equipment		78,207
Derivative asset		13,967
Right of use asset		6,547
Security deposits		1,775
Future power credits ⁽¹⁾		82,953
Accounts payable		(12,853)
Accrued expenses		(504)
Deferred revenues and customer deposits		(34,856)
Operating lease liabilities		(8,184)
Total identifiable assets and liabilities acquired		140,700
Goodwill ⁽²⁾		319,684
Total purchase consideration	\$	460,384

(1) Future power credits of \$83.0 million are associated with the contingent purchase price payable.

(2) Goodwill represents the excess of total purchase consideration over the preliminary fair value of the underlying assets acquired and liabilities assumed. Goodwill is attributable to the assembled workforce of experienced personnel at Whinstone and synergies expected to be achieved from the combined operations of Riot and Whinstone. None of the goodwill recognized is expected to be deductible for tax purposes. We assigned the goodwill to our Hosting segment. See Note 18, "Segment Information".

The \$460.4 million total purchase price consideration consisted of \$326.2 million fair value of Riot common shares issued, a \$53.0 million cash payment (including \$38.1 million of debt payoff and certain Seller transaction costs), an \$83.0 million contingent purchase price payable to the Seller and other net items of \$(1.7 million).

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As part of the share purchase agreement Riot entered into with the Seller in connection with the Whinstone Acquisition, Riot is obligated to Seller to pay up to a maximum amount of \$86 million, net of income taxes as defined under the stock purchase agreement (undiscounted) of additional consideration if certain power credits are received or realized by Whinstone. Those power credits arose from the February 2021 weather event. The purchase price included the estimated fair value of the contingent consideration at the Whinstone Acquisition Date of approximately \$83 million. The fair value measurement is based on significant inputs not observable in the market and thus represents a Level 3 measurement as defined in ASC 820. The significant assumptions used to estimate the fair value are described in Note 14, "Fair Value Measurements". These assumptions for the power credits whose utilization by Whinstone is contingent on ERCOT's future power billings, include the timing of receipt or realization of the power credits, estimates of future power consumption, the discount rate and credit risk of the Company and the owing party (ERCOT).

The fair value of the acquired trade receivables was determined to be the net realizable amount of the closing date book value of \$1.1 million.

The fair value of the acquired long-term other asset of approximately \$83 million relates to the estimated amount of power credits due Whinstone from the February 2021 weather event. We estimated the fair value of the power credits to be the same as that of the contingent consideration arrangement because the Company is required to remit to the Seller in cash as additional consideration the amount of such power credits received or realized by Whinstone. See discussion above on contingent consideration.

The derivative asset acquired pertains to Whinstone's Power Supply Agreement. Fair value of the contract of approximately \$14 million was estimated by applying a discounted debt-free cash flow approach. This fair value measurement is based on significant inputs not observable in the market and thus represents a Level 3 measurement as defined in ASC 820. The significant assumptions used to estimate fair value of the derivative contract include a discount rate of 21%, which reflected the nature of the contract as it relates to the risk and uncertainty of the estimated future mark-to-market adjustments, forward price curves of the power supply, broker/dealer quotes and other similar data obtained from quoted market prices or independent pricing vendors.

The fair value of property and equipment was estimated by applying the cost approach. The cost approach uses the replacement or reproduction cost as an indicator of fair value. The assumptions of the cost approach include replacement cost new, projected capital expenditures, and physical deterioration factors including economic useful life, remaining useful life, age, and effective age.

The operating results of Whinstone have been included in the Company's consolidated statements of operations since the Acquisition Date. During the year ended December 31, 2021, the Company recognized \$19.1 million of acquisition-related costs that were expensed as incurred.

The financial results of the acquisition have been included in the Company's consolidated financial statements from the closing of the acquisition. From the May 26, 2021 acquisition date through December 31, 2021, Whinstone's total revenue and net income was approximately \$24.5 million and \$1.2 million, respectively.

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Pro Forma Information (Unaudited)

The following unaudited pro forma financial information summarizes the combined results of operations for Riot, Whinstone and ESS Metron as if the companies were combined as of January 1, 2020. The unaudited pro forma information does not reflect the effect of costs or synergies that may result from the acquisition. The pro forma information excludes acquisition-related costs of \$21.2 million during the year ended December 31, 2021. The pro forma information does not purport to be indicative of the results of operations that actually would have resulted had the combination occurred on January 1, 2020, or of future results of the consolidated entities. This unaudited pro forma information is presented for informational purposes only and is not necessarily indicative of future operating results of the combined company (in thousands).

	Years Ended December 31,	
	2021	2020
Total revenue	\$ 237,650	\$ 73,608
Net loss	\$ 9,615	\$ 51,890

Asset Purchase Agreement with Prive Technologies LLC

On February 21, 2018, the Company and Kairos, completed an asset purchase under an agreement (the “Prive Purchase Agreement”) with Prive. Upon closing of the transaction, Kairos became the owner of Prive equipment used for the mining of cryptocurrency, including, but not limited to, 3,800 Bitmain Antminer S9s. The equipment was recorded for a purchase price of approximately \$19.5 million as follows (in thousands):

Cash consideration	\$ 11,000
Fair value of common stock	8,480
Other expenses	2
Total	\$ 19,482

As part of the Prive Purchase Agreement, 200,000 shares of the Company’s common stock were held in escrow (the “Escrow Shares”). No value was assigned to the Escrow Shares at the time of the acquisition as they were contingent consideration. The Escrow Shares would have been released to the Sellers upon the Company generating net cash flow of at least \$10.0 million from the equipment. If the Escrow Shares were not released to the Sellers on or before the two-year anniversary (February 2020) of the Prive Purchase Agreement, the Escrow Shares would be returned to the Company for cancellation. In February 2020, the conditions were not achieved and after receiving notification on March 4, 2020, the escrow agent returned and canceled the 200,000 shares.

Acquisition of Logical Brokerage Corp.

On March 26, 2018, the Company entered into an asset acquisition with Logical Brokerage Corp. The Company purchased 9.25 shares of Logical Brokerage, representing 92.5% of the outstanding capital stock of Logical Brokerage, for a cash purchase price of \$0.6 million. Logical Brokerage, a futures introducing broker headquartered in Miami, Florida is registered with the CFTC and is a member of the NFA. The asset was recorded at the purchase price of \$0.6 million, net of cash received with the asset acquisition of \$0.1 million, plus any transaction costs. The CFTC license was recorded as intangible rights acquired.

The Company made the decision, effective as of December 31, 2019 not to pursue its RiotX / Logical Brokerage business development plan. Under the guidance of ASU 2014-08, *Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity*, the Company determined that the discontinuation of RiotX / Logical Brokerage did not represent a strategic shift that would have a major effect on the Company’s operations and financial results. The Company accounted for the discontinuation as an impairment of an intangible asset acquired, and as of December 31, 2019, recorded an impairment expense of approximately \$0.7 million and recorded an income tax benefit of approximately \$0.1 million, which are reflected in the accompanying consolidated statements of operations.

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Note 5. Revenue from Contracts with Customers

We recognize revenue when we transfer promised services to customers in an amount that reflects the consideration to which we expect to be entitled in exchange for those services.

Disaggregated revenue

The following table presents the Company's revenues disaggregated into categories based on the nature of such revenues (in thousands):

Schedule of Disaggregated Revenue:

	Years Ended December 31,		
	2021	2020	2019
Mining	\$ 184,422	\$ 11,984	\$ 6,741
Hosting	24,546	-	-
Engineering	4,178	-	-
Other	97	97	96
Total revenue	\$ 213,243	\$ 12,081	\$ 6,837

Contract balances

For the years ended December 31, 2021, 2020 and 2019, the Company did not recognize material bad-debt expense. Contract assets consist of costs and estimated earnings in excess of billings on uncompleted engineering contracts. The balance was entirely from the ESS Metron acquisition and was \$9.9 million and \$0 as of December 31, 2021 and 2020, respectively.

The Company's contract liabilities primarily relate to upfront payments and consideration received from customers for data center hosting, billings in excess of costs and estimated earnings on uncompleted engineering contracts and the upfront license fee generated from our legacy animal health business. The table below presents changes in the total deferred revenue liability, for the years ended December 31, 2021 and 2020 (in thousands):

	Years Ended December 31,	
	2021	2020
Beginning balance	\$ 776	\$ 873
Acquired contract balances	34,424	-
Revenue recognized from acquired contract balances	(1,500)	-
Termination of an acquired customer contract	(5,700)	-
Revenue recognized that was included in the beginning balance	(97)	(97)
Ending balance	\$ 27,903	\$ 776

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Transaction price allocated to remaining performance obligations

Remaining performance obligations represent the transaction price of contracts for work that has not yet been performed. Amounts related to cryptocurrency mining are not included because the Company elected the practical expedient to not disclose amounts related to contracts with a duration of one year or less.

Hosting and Engineering revenue – remaining performance obligation

The table below presents estimated revenue expected to be recognized in the future related to the unsatisfied portion of the performance obligation at December 31, 2021 (in thousands):

(in thousands)	2022	2023	2024	2025	Thereafter	Total
Hosting ⁽¹⁾	3,414	3,414	3,414	3,414	8,304	21,960
Engineering	5,264	-	-	-	-	5,264
Total contract liabilities⁽²⁾	\$ 8,678	\$ 3,414	\$ 3,414	\$ 3,414	\$ 8,304	\$ 27,224

(1) Data center hosting revenue primarily includes upfront payments which the Company generally recognizes as services are provided.

(2) The Company elected the “right to invoice” practical expedient and therefore does not include amounts related to (1) the satisfaction of performance obligations recognized in the amount invoiced, and (2) variable consideration related to future services.

Other revenue – remaining performance obligation

As of December 31, 2021 and 2020, the aggregate amount remaining of the upfront license fee, for the right to access certain intellectual property relating to the Company’s Animal Health assets, was approximately \$0.7 million and \$0.8 million, respectively. The fee is being recognized ratably over the license term, which ends in 2028.

Additionally, we have elected to use the practical expedient to not adjust the transaction price for the existence of a significant financing component if the timing difference between a customer’s payment and our performance is one year or less.

Note 6. Cryptocurrencies

The following table presents information about our cryptocurrencies (Bitcoin):

	December 31, 2021	December 31, 2020
Beginning balance	\$ 11,626	\$ 3,839
Revenue recognized from cryptocurrencies mined	184,422	11,838
Proceeds from sale of cryptocurrencies	(295)	(8,298)
Realized gain on sale/exchange of cryptocurrencies	253	5,184
Impairment of cryptocurrencies	(36,462)	(989)
Cryptocurrencies received from sale of equipment	-	52
Ending balance	\$ 159,544	\$ 11,626

During 2021, all cryptocurrency activity was from Bitcoin. During 2020, all but less than \$0.1 million was from Bitcoin.

During 2021, 2020 and 2019, the Company recorded impairment charges on its cryptocurrency holdings of \$36.5 million, \$1.0 million and \$0.8 million, respectively.

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Note 7. Investments in Marketable Equity Securities and Long-term Investments

Investments in Marketable Equity Securities

Coinsquare and Mogo

In September 2017, and February 2018, the Company acquired a minority interest for \$9.4 million in Coinsquare, which operates a digital crypto currency exchange platform in Canada. The investment resulted in an ownership in Coinsquare by the Company of approximately 11.7% ownership in Coinsquare on a fully diluted basis. The Company evaluated the guidance in ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, and elected to account for the investment using the measurement alternative as the equity securities are without a readily determinable fair value and do not give the Company significant influence over Coinsquare. The measurement alternative at cost, less any impairment, plus or minus changes resulting from observable price changes.

During June 2020, the Company became aware of allegations brought by the Ontario Securities Commission (the “OSC”) that Coinsquare and certain of its executives and directors engaged in systematic “wash trading” of cryptocurrencies on its Coinsquare market to manipulate the market’s trading volume during 2018 and 2019.

On July 21, 2020, a hearing panel of the OSC entered an order (the “Order”) approving the settlement agreement between OSC, Coinsquare, and certain of its executives and directors (the “Settlement Agreement”), in which they admitted to breaches of Ontario securities laws and/or conduct contrary to the public interest including, market manipulation through reporting inflated trading volumes on its Coinsquare Market, misleading its clients and investors about these trading volumes, and taking reprisal against an internal whistleblower who brought this conduct to the attention of the named executives and directors. The Order requires certain oversight and governance procedures and to prohibit the named executives and directors from engaging in certain activities with respect to Coinsquare; additionally, the named executives and directors were required to resign from Coinsquare and Coinsquare and the named executives and directors were required to pay penalties and costs totaling approximately CAD 2.2 million.

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The Company thereupon determined there were indicators that would cause a 100% impairment of the Coinsquare investment and observed price changes, which was recorded as of June 30, 2020. The Company therefore recorded an impairment expense of \$9.4 million for its investment in Coinsquare during the year ended December 31, 2020, as reflected in the accompanying consolidated statements of operations.

During the year ended December 31, 2021, under agreements generally between Coinsquare, Coinsquare's shareholders (including Riot) and Mogo Inc. (NASDAQ: MOGO) ("Mogo Agreement"), a digital payments and financial technology company ("Mogo"), Riot sold its 3.4 million common shares of Coinsquare (the "Coinsquare Shares") in exchange for approximately 3.2 million common shares of Mogo (the "Mogo Shares") and approximately US \$1.8 million in cash.

During the year ended December 31, 2021, the Company recorded a gain on sale/exchange of long-term investments of \$26.3 million for the sale of its shares of Coinsquare. Concurrently, in accordance with ASC 321, we recorded the fair value of the MOGO shares, received in the exchange of \$24.8 million in investments in marketable equity securities within current assets on our consolidated balance sheets. The fair value was calculated as 3.2 million shares of Mogo common stock multiplied by the fair value of the Mogo shares received. During the year ended December 31, 2021, we recorded an unrealized loss on the shares of approximately \$13.7 million based on the closing price per share of Mogo common stock on NASDAQ on December 31, 2021 of \$3.42. The daily share price is extremely volatile and may be more or less than the amount recorded as of December 31, 2021.

Long-term Investments

Tess

In 2017, the Company acquired approximately 52% of Tess which is developing blockchain solutions for telecommunications companies. Under the terms of the Purchase Agreement (the "Purchase Agreement") the Company invested cash of approximately \$0.3 million in Tess and issued 75,000 shares of restricted Common Stock to Tess in exchange for 2,708,333 shares of common stock of Tess. The 75,000 shares of Common Stock were valued at the \$8.49 market price as of October 20, 2017 for a total of approximately \$0.6 million. Accordingly, Tess became a majority-owned subsidiary of the Company. As part of the transaction, the Company and Tess entered into a registration rights agreement pursuant to which the Company agreed to file a registration statement to register the resale of 25,000 shares (of 75,000 shares) of Common Stock issued to Tess. The 2017 acquisition of Tess was accounted for as a business combination in accordance with the provisions of ASC 805. The allocation of purchase consideration includes \$0.7 million as in-process research and development (IPR&D) related to the TessPay project. As of December 31, 2018, the Company had \$0.6 million of intangibles related to Tess's internal technology platform.

In January 2018, following the execution of a non-binding letter of intent as of December 11, 2017, the parties executed a definitive agreement providing that Tess agreed to merge with Cresval Capital Corp. ("Cresval") (TSX-V: CRV). Assuming closing conditions are met, upon closing of the anticipated merger, Tess would be publicly traded on the TSX Venture Exchange (the "TSXV").

During the year ended December 31, 2018, Tess received approximately \$0.5 million from the sale of shares of Riot Blockchain common stock held by Tess, which has been recorded as a credit to the consolidated Common Stock of the Company. Additionally, Tess issued approximately 189,000 of its common shares in exchange for cash proceeds of approximately \$220,000 thereby reducing the investment percentage held by the Company from 52.01% to 50.2% as of December 31, 2018. Due to the termination of the Cresval Agreement on February 15, 2019, the Company recorded an impairment loss of \$2.1 million consisting of \$0.7 million of in process research and development costs, \$0.6 million related to capitalized costs of Tess's internal technology platform and \$0.8 million of goodwill during the year ended December 31, 2018.

On April 10, 2019, Tess closed on a funding agreement under which approximately 23.8 million shares of Tess were issued for CAD \$1.2 million. As a result of this and subsequent funding's, the Company's ownership in Tess was reduced to approximately 8.8%. Subsequently Tess was no longer being consolidated in the Company's consolidated financial statements.

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As of December 31, 2019, the Company evaluated its remaining interest in Tess under the guidance of ASU 2016-01 and determined it should remeasure its retained interest at fair value upon deconsolidation to establish a new cost basis. As of December 31, 2021 and 2020, the fair value of the Tess shares owned by the Company is approximately \$0.1 million, calculated based upon the April 10, 2019 funding price as follows:

Tess shares held by Riot Blockchain, Inc.	2,708,333
Per share fair value	\$ 0.03
Fair value of Tess shares held by Riot Blockchain, Inc.	\$ 90

Verady

During November 2017, the Company made a \$0.2 million investment in a convertible note as part of a series of notes issued by Verady, LLC (“Verady”). The notes are unsecured, subordinated to other approved liabilities, mature December 31, 2022, bear interest at 6%, unless previously repaid or converted and contain other conditions and restrictions, all as defined under the subscription documents. The Verady convertible note was previously recorded at fair value (which approximates cost). The conversion rate of the convertible note is defined based upon the possible occurrence of certain defined events which may or may not occur. The Company has no other relationship or rights associated with Verady. Founded in 2016, Verady is privately held and recently launched VeraNet, a decentralized network of financial reporting and accounting tools targeted to the needs of the cryptocurrency community.

During the year ended December 31, 2019, Verady completed a financing that under the terms of the Company’s original investment, resulted in the automatic conversion of the Company’s convertible note plus accrued interest totaling approximately \$0.2 million, into equity of Verady. The 2019 automatic conversion resulted in an ownership in Verady by the Company of approximately 3.2% on a fully diluted basis. The Company has evaluated the guidance in ASU 2016-01 and elected to account for the investment using the measurement alternative as the equity securities are without a readily determinable fair value and do not give the Company significant influence over Verady. The investment is valued at cost, less any impairment, plus or minus changes resulting from observable price changes. During the year ended December 31, 2021 and 2020, there were no price changes in orderly transactions for identical or similar investments in Verady or Tess.

Note 8. Property and Equipment

Property and equipment consisted of the following as of December 31, 2021 and 2020 (in thousands):

	Life (Years)	December 31, 2021	December 31, 2020
Buildings and improvements	10-25	\$ 78,548	\$ -
Miners and mining equipment	2	87,921	14,406
Machinery and facility equipment	5-7	12,373	-
Office and computer equipment	3	1,007	83
Construction in progress		113,598	-
Total cost of property and equipment		293,447	14,489
Less accumulated depreciation		(30,467)	(4,346)
Property and equipment, net		<u>\$ 262,980</u>	<u>\$ 10,143</u>

There were no impairment charges for the years ended December 31, 2021, 2020 and 2019.

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During 2021, we received 34,608 additional Antminer model S19-Pro miners related to its purchase contracts with Bitmain and, as of December 31, 2021, had deployed a total of 30,907 miners in its mining operation. Additionally, we entered into six additional purchase agreements with Bitmain to acquire 52,500 Antminer model S19j (90 Terahash per second) (“TH/s”) miners and 30,000 of their latest Antminer model S19XP (140 TH/s) miners for a combined total purchase price of approximately \$535.0 million. Pursuant to these agreements, approximately \$301.3 million remains payable to Bitmain in installments in advance of shipment of the miners, which is scheduled to occur on a monthly basis through December 2022.

During the year ended December 31, 2020, the Company purchased 33,646 Bitmain S19-Pro Antminers and as of December 31, 2020 the Company had received 3,043 of the S19-Pro Antminers.

In December 2020, the Company entered into a pilot project with a dual focus of evaluating next-generation immersion technology to increase mining productivity, in addition to evaluating software to reduce energy costs. These technologies have the potential to reduce the Company’s Bitcoin production costs, increase hash rate capacity and significantly extend the life of the Company’s Bitcoin mining ASICs. During June 2021, this pilot project had commenced full operation and the approximate \$2.7 million in equipment costs for this project previously not yet operational and included in “Miners and mining equipment” in the table above, commenced being depreciated.

Depreciation and amortization expense related to property and equipment totaled approximately \$26.1 million, \$4.3 million and \$0.1 million, for the years ended December 31, 2021, 2020 and 2019, respectively.

Depreciation is computed on the straight-line basis for the periods the assets are in service.

Construction in progress:

Upon completion of the Whinstone Acquisition, the Company commenced expansion of the Whinstone Facility from its existing 300 MW developed capacity to 700 MW. This expanded Bitcoin mining infrastructure is expected to comprise four new buildings totaling approximately 240,000 square feet, with the capacity to support an estimated 112,000 S19j Antminers based upon current configurations. It is expected that the first portion of this expansion will be completed by Q1 2022 and the balance during Q2 2022. Two of these four buildings are being developed utilizing air-cooling infrastructure, with the optionality to upgrade to immersion-cooling. The other two of these buildings are being developed utilizing immersion-cooling technology, a technique that offers improved cooling performance as compared to air-cooling infrastructure. The expansion of Bitcoin mining infrastructure at Whinstone provides critical capacity for Riot to deploy its future shipments of Bitcoin mining hardware, in addition to providing an opportunity to expand Whinstone’s hosting business for third-party Bitcoin miners.

In November 2021, Riot’s 400 MW expansion at the Whinstone Facility hit multiple progress milestones while navigating the challenges with the current state of the global supply chain. Progress during the month included the completion of the substation expansion to 700 MW, successful installation of the substation busbar, and 400 MW of high-voltage transformers. Whinstone also completed construction of Building F, Riot’s first self-mining building dedicated to immersion-cooled Bitcoin mining, while also advancing on its second immersion-cooled dedicated building, Building G. In December 2021, Whinstone also received most of the structural components required for Buildings D, E, and G. The construction completion timeline is currently on-time, despite global supply chain shortages and delays. A hosting client with its miners in a portion of Building C has now filled the remainder of Building C with its miners.

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Commitment:

As of December 31, 2021, the Company had outstanding executed purchase agreements for the purchase of miners from Bitmain for a total of 30,495 new S19j-Pro model miners and 30,000 new S19XP model miners, scheduled to be delivered through December 2022, and had paid a deposit of 43% of the total purchase price. A summary of the purchase agreement commitments, deposits paid and expected delivery timing (remaining balances are payable in advance of shipping) is summarized as follows (in thousands):

Agreement Date *	Original Purchase Commitment	Open Purchase Commitment	Deposit Balance	Expected Shipping
April 5, 2021	\$ 138,506	\$ 52,838	\$ 85,668	First Quarter 2022 - Fourth Quarter 2022
October 29, 2021	56,250	31,950	24,300	Second Quarter 2022 - Third Quarter 2022
November 22, 2021	32,550	21,158	11,392	Third Quarter 2022 - Fourth Quarter 2022
December 10, 2021	97,650	63,472	34,178	Third Quarter 2022 - Fourth Quarter 2022
December 24, 2021	202,860	131,859	71,001	Third Quarter 2022 - Fourth Quarter 2022
Total	\$ 527,816	\$ 301,277	\$ 226,539	

* Pursuant to the Company's agreements with Bitmain, the Company is responsible for all shipping charges incurred in connection with the delivery of the miners.

The Company paid approximately \$85.7 million as a deposit for the miners to be acquired under the purchase agreement, dated effective as of April 5, 2021, with Bitmain to acquire approximately 42,000 Antminer model S19j Miners, which are scheduled to be shipped in 12 batches of approximately 3,500 miners each, on a monthly basis, through October 2022.

During the fourth quarter ended December 31 2021, the Company entered into purchase agreements with Bitmain to acquire 9,000 S19j Pro (100 TH/s) miners and 30,000 S19XP (140 TH/s) miners, for a total purchase price of approximately \$389.3 million, with an anticipated delivery and deployment schedule set for April 2022 through December 2022.

Note 9. Long-Term Assets

Deposits

Deposits consisted of the following as of December 31, 2021 and 2020 (in thousands):

	December 31, 2021	December 31, 2020
<u>Deposits on equipment</u>		
Beginning balance	\$ 33,093	\$ 1,449
Additions	274,833	33,093
Reclassification to property and equipment	(46,711)	(1,449)
Ending Balance	261,215	33,093
<u>Security deposits</u>	4,955	-
	\$ 266,170	\$ 33,093

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Deposits on Equipment

During the year ended December 31, 2021, the Company paid approximately \$274.8 million as deposits, primarily for miners, and, as of December 31, 2021, had reclassified \$46.7 million to property and equipment in connection with the receipt of 23,864 miners at the Coinmint Facility and the Whinstone Facility. See Note 5, “Revenue from Contracts with Customers”.

During the year ended December 31, 2020, the Company purchased 33,646 model S19, S19-Pro, and S19j-Pro Antminers from Bitmain for a total purchase price of approximately new miners totals \$76.1 million, including \$6.6 million paid for the 3,043 miners delivered during the year ended December 31, 2020, \$31.9 million paid as deposits in deposits during the same period, and the remaining \$37.6 million due to be paid during the year ending December 31, 2021. As of December 31, 2020, the Company had received 3,043 of the new miners, including all 1,040 model S19 miners and 2,003 model S19-Pro miners, but had not yet received 30,603 of the new miners, including 18,603 model S19-Pro miners and all 12,000 model S19j-Pro miners. The 30,603 were delivered in monthly shipments through January 2022. Accordingly, the Company recorded the \$31.9 million paid during the year ended December 31, 2020 for these outstanding miners as a deposit, which includes these miners on the accompanying consolidated balance sheet. (See Note 7, “Investments in Marketable Equity Securities” for additional details.)

During December 2019, the Company purchased 4,000 Bitmain model S17-Pro Antminers from Bitmain for approximately \$6.3 million. The Company had received 3,000 of these model S17-Pro miners by December 31, 2019, and, accordingly, they were recorded as assets on the Company’s consolidated balance sheet for the year ended December 31, 2019. However, 1,000 of these S17-Pro miners were not received until February 2020. Therefore, as of December 31, 2019, the Company recorded the \$1.4 million paid in advance for these 1,000 model S17-Pro miners as a deposit on the accompanying consolidated balance sheet.

Security Deposits

During the year ended December 31, 2021, the Company paid approximately \$3.1 million in connection with an amended and restated Transmission/Substation Facility Extension Agreement for the construction of the Oncor-owned Delivery System facilities to serve the expansion of the Whinstone Facility. The deposit can be returned in two tranches: 1) upon verification by Oncor that the load demand meets or exceeds 394 MW, approximately \$1.3 million can be returned, and 2) upon verification by Oncor that the load demand meets or exceeds 725 MW, the remaining \$1.8 million can be returned. As of December 31, 2021, the Company has security deposits totaling approximately \$5.0 million, including its ground lease of \$1.8 million.

Right of Use Assets

See Note 11, “Leases”.

Note 10. Accrued Expenses

As of December 31, 2021 and 2020, the Company’s accrued expenses consisted of the following (in thousands):

	December 31, 2021	December 31, 2020
Construction in progress	\$ 12,110	\$ -
Payroll and payroll taxes	5,741	415
Insurance	2,507	-
Other	1,713	1,167
Total accrued expenses	\$ 22,071	\$ 1,582

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Note 11. Leases

At December 31, 2021, the Company had operating lease liabilities and right of use assets for its offices, manufacturing facilities of ESS Metron, and a ground lease at the Whinstone Facility that expires in December 2030, inclusive of extension options the Company is reasonably certain will be exercised. At December 31, 2020, the Company did not have any significant operating lease balances.

In November 2021, the Company entered into a lease termination agreement with the landlord of certain Whinstone abandoned leases for approximately \$0.9 million. After eliminating the associated operating lease liabilities, we recognized other income of approximately \$0.7 million during the year ended December 31, 2021.

Rental expense for lease payments related to the Company's operating leases is recognized on a straight-line basis over the remaining lease term. The Company currently does not hold any finance leases. The Company elected to use the practical expedient of not separating lease components for its real estate leases. The Company has elected the short-term lease exception provided, and therefore only recognizes right of use assets and lease liabilities for leases with a term greater than one year. Leases qualifying for the short-term lease exception were insignificant.

As of December 31, 2021 and 2020, the right of use assets were \$13.2 million and zero, respectively, and the operating lease liabilities were \$13.4 million and zero, respectively, in the accompanying consolidated balance sheets related to our ground lease and office leases. Operating lease right of use assets are included within long-term assets on the consolidated balance sheets.

The calculation of the right of use assets and lease liabilities include minimum lease payments over the remaining lease term. Variable lease payments are excluded from the amounts and are recognized in earnings in the period in which the obligation for those payments is incurred. To determine the present value of future minimum lease payments, the Company utilized its incremental borrowing rate adjusted for the remaining lease term and the form of underlying collateral. The discount rate implicit in the leases was not readily determinable.

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The following summarizes quantitative information about the Company's operating leases (dollars in thousands):

Lease cost	Years Ended December 31,		
	2021	2020	2019
Operating lease cost	\$ 678	\$ 1,240	\$ 2,378
Variable lease cost ⁽¹⁾	51	1,040	3,200
Operating lease expense	729	2,280	5,578
Short-term lease rent expense	19	20	17
Total rent expense	\$ 748	\$ 2,300	\$ 5,595

(1) Amounts primarily include common area maintenance and utility charges not included in the measurement of right of use assets and operating lease liabilities.

Other information

Operating cash flows from operating leases	\$ 435	\$ 1,207	\$ 2,377
Right of use assets exchanged for new operating lease liabilities	\$ 13,622	\$ -	\$ 2,664
Weighted-average remaining lease term – operating leases	8.6	-	0.5
Weighted-average discount rate – operating leases	5.8%	-	10%

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The following table represents our future minimum operating lease payments as of, and subsequent to, December 31, 2021 under ASC 842 (in thousands):

	Ground lease	Office and other leases	Total
2022	\$ 942	\$ 990	\$ 1,932
2023	970	1,012	1,982
2024	999	1,001	2,000
2025	1,029	908	1,937
2026	1,060	823	1,883
Thereafter	3,374	4,060	7,434
Total undiscounted lease payments	8,374	8,794	17,168
Less present value discount	(2,164)	(1,565)	(3,729)
Present value of lease liabilities	\$ 6,210	\$ 7,229	\$ 13,439

Note 12. Stockholders' Equity

Preferred Stock

0% Series B Convertible Preferred Stock

On November 3, 2017, the Company designated 1,750,001 shares of preferred stock as "0% Series B Convertible Preferred Stock" pursuant to the Certificate of Designation filed with the Secretary of State of the State of Nevada.

The shares of 0% Series B Convertible Preferred Stock are non-voting and convertible into shares of common stock based on a conversion calculation equal to the stated value of the 0% Series B Convertible Preferred Stock, plus all accrued and unpaid dividends, if any, on such 0% Series B Convertible Preferred Stock, as of such date of determination, divided by the conversion price. The stated value of each share of 0% Series B Convertible Preferred Stock is \$6.80 and the initial conversion price is \$6.80 per share, each subject to adjustment for stock splits, stock dividends, recapitalizations, combinations, subdivisions or other similar events. The holders of 0% Series B Convertible Preferred Stock are entitled to receive dividends if and when declared by the Company's board of directors. The 0% Series B Convertible Preferred Stock is also subject to beneficial ownership limitations and conversion limitations, as further described in the documents.

During the year ended December 31, 2021, 2,000 shares of the Company's 0% Series B Convertible Preferred Stock were converted into 2,000 shares of its common stock, leaving 2,199 shares outstanding. As of December 31, 2021 and 2020, 2,199 and 4,199 shares of the Company's 0% Series B Convertible Preferred Stock were outstanding, respectively.

Subsequent to December 31, 2021, the remaining 2,199 shares of the Company's 0% Series B Convertible Preferred Stock were converted to 2,199 shares of its common stock and no shares of the Company's 0% Series B Convertible Preferred Stock are currently outstanding.

Common Stock:

At-the-Market Equity Offerings

2021 ATM Offering

For the period August 31, 2021 to December 31, 2021, in connection with the At-the-Market Sales Agreement between the Company and its sales agent, Cantor Fitzgerald & Co., B. Riley FBR, Inc., BTIG, LLC, Compass Point Research & Trading, LLC and Roth Capital Partners, LLC (the "Sales Agents") the Company received gross proceeds of approximately \$600 million (\$587.2 million, net of \$12.8 million in commissions and expenses) from the sale of 19,910,589 shares of common stock, with an average fair value of \$29.53 per share, in the 2021 ATM Offering. With the sale and issuance of these shares, all \$600 million in shares of the Company's common stock registered under the December 2021 Registration Statement had been issued and the Company completed the 2021 ATM Offering.

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2020 ATM Offering

As of October 15, 2020, the Company and H.C. Wainwright entered into the first amendment to the Sales Agreement (the “First Amendment to the Sales Agreement”). Pursuant to the First Amendment to the Sales Agreement, the Company sold, through H.C. Wainwright as its sales agent, \$100.0 million in shares of the Company’s common stock from time to time in an at-the-market offering (the “October 2020 ATM Offering”). According to the First Amendment to the Sales Agreement, the Company paid H.C. Wainwright a commission of up to 3.0% of the aggregate gross proceeds the Company receives from all sales of its common stock in the October 2020 ATM Offering.

All Sales of shares of the Company’s common stock, no par value in the October 2020 ATM Offering were made pursuant to the prospectus and prospectus supplement filed with and forming a part of the Company’s shelf registration statement on Form S-3 (Registration No. 333-249356), filed with the SEC on October 7, 2020 and declared effective as of October 15, 2020 (the “October 2020 Registration Statement”). Under the terms of the October 2020 ATM Offering, the Company only issued shares of its common stock. The Company did not issue any other securities, including but not limited to, options to purchase shares of the Company’s common stock and common stock warrants, under the October 2020 ATM Offering.

Effective December 12, 2020, the Company and H.C. Wainwright entered into the second amendment to the Sales Agreement (the “Second Amendment to the Sales Agreement”). Pursuant to the Second Amendment to the Sales Agreement, the Company has sold, through H.C. Wainwright as its sales agent, up to \$200.0 million in shares of the Company’s common stock from time to time in an at-the-market offering (the “December 2020 ATM Offering”). Pursuant to the Second Amendment to the Sales Agreement, the Company paid H.C. Wainwright a commission of up to 3.0% of the aggregate gross proceeds the Company received from all sales of its common stock in the December 2020 ATM Offering.

During January 2021, in connection with the Second Amendment to the At-the-Market Sales Agreement between the Company and its sales agent, H.C. Wainwright, the Company received gross proceeds of approximately \$84.8 million (\$82.7 million, net of \$2.1 million in expenses) from the sale of 4,433,468 shares of common stock, with an average fair value of \$19.13 per share, in the December 2020 ATM Offering. With the sale and issuance of these shares, all \$200 million in shares of the Company’s common stock registered under the December 2020 Registration Statement had been issued and the Company completed the December 2020 ATM Offering.

2019 ATM Offering

The Company entered into an At-The-Market Sales Agreement with H.C. Wainwright & Co., LLC (“H.C. Wainwright”), dated as of May 24, 2019 (the “Sales Agreement”), relating to the sale by the Company through H.C. Wainwright as its sales agent, of up to \$100.0 million in shares of the Company’s common stock from time to time in an at-the-market offering (“2019 ATM Offering”). All sales of the Company’s common stock in the 2019 ATM Offering were made pursuant to the prospectus and prospectus supplement forming a part of the Company’s shelf registration statement on Form S-3, as amended (Registration No. 333-226111), which was declared effective as of May 8, 2019 (the “2019 Registration Statement”).

Effective as of October 15, 2020, as part of the First Amendment to the Sales Agreement discussed below, the Company and H.C. Wainwright terminated the 2019 ATM Offering. As of its termination, the Company had cumulatively sold 30.6 million shares of its common stock, for an aggregate gross sales price of approximately \$74 million pursuant to the 2019 ATM Offering. With the termination of the 2019 ATM Offering, no additional securities will be sold by the Company pursuant to the prospectus supplement relating to the 2019 Registration Statement.

Under the terms of the 2019, 2020 and 2021 ATM Offerings, the Company only issued shares of its common stock.

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2021 Transactions

During the year ended December 31, 2021, the Company issued 11,800,000 shares of its common stock in connection with its acquisition of Whinstone. See Note 4, "Acquisitions".

During the year ended December 31, 2021, the Company issued 645,248 shares of its common stock in connection with its acquisition of ESS Metron. See Note 4, "Acquisitions".

During the year ended December 31, 2021, 464,021 shares of common stock were issued to the Company's board of directors, officers, employees and advisors of the Company in settlement of an equal number of fully vested restricted stock units awarded to such individuals by the Company pursuant to grants made under the Company's 2019 Equity Plan, as amended (the "2019 Equity Plan"). The Company withheld 174,685 of these shares, at a fair value of approximately \$5.1 million, to cover the withholding taxes related to the settlement of these vested restricted stock units, as permitted by the 2019 Equity Plan.

During the year ended December 31, 2021, the Company issued 415,657 shares of its common stock in connection with the exercise of 415,657 common stock warrants issued to investors in connection with the Company's January 2019 private placement transaction, for net proceeds of approximately \$0.8 million.

During the year ended December 31, 2021, the Company issued 543,686 shares of its common stock in connection with the cashless exercise of warrants to purchase 1,257,235 shares of common stock, which were issued to investors in connection with private placement transactions in December 2017.

During the year ended December 31, 2021, the Company issued 10,286 shares of its common stock upon the cashless exercise of 12,000 stock options.

During the year ended December 31, 2021, 2,000 shares of the Company's 0% Series B Convertible Preferred Stock were converted into 2,000 shares of its common stock, leaving 2,199 shares outstanding. The Company currently has one equity compensation plan, The Riot Blockchain, Inc. 2019 Equity Incentive Plan, as amended (the "2019 Plan"). On October 19, 2021, the Company's shareholders approved the second amendment to its 2019 Equity Plan, which increased the number of shares of the Company's common stock reserved for issuance by 4,400,000 shares.

2020 Transactions

During the year ended December 31, 2020, the Company received net proceeds under the Sales Agreement, as amended with H.C. Wainwright of approximately \$257.5 million (after deducting \$7.3 million in commissions and expenses), at a weighted average gross sales price of \$5.30 per share, from sales of 49,932,051 shares of its common stock.

During the year ended December 31, 2020, the 200,000 shares of common stock held in escrow under the Escrow Deposit Agreement were voided and cancelled.

During the year ended December 31, 2020, 122,377 shares of common stock were issued to a Company executive under an employment agreement in settlement of \$175,000 of previously accrued compensation under the Company's 2019 Riot Blockchain, Inc. Equity Incentive Plan (the "Equity Plan"), and 5,000 shares of common stock were issued in settlement of fully vested restricted stock rights previously granted and previously expensed under the Company's former 2017 Equity Incentive Plan.

During the year ended December 31, 2020, 2,048,096 shares of common stock were issued to the Company's board of directors, officers and employees of the Company in settlement of an equal number of fully vested restricted stock units awarded to such individuals by the Company pursuant to grants made under the Company's 2019 Equity Plan. The Company withheld 193,881 of these shares at a fair value of approximately \$0.45 million, to cover the withholding taxes related to the settlement of these vested restricted stock units. The settlement of the fully vested restricted stock units included the accelerated vesting of 471,544 restricted stock units due to the resignation of a member of the Company's Board, as permitted under the 2019 Equity Plan.

During the year ended December 31, 2020, the Company issued 40,634 shares of its common stock to a consultant and advisors in settlement of fully vested restricted stock units granted under the 2019 Equity Plan.

During the year ended December 31, 2020, the Company issued 1,492,487 shares of its common stock related to the exercise of 1,492,487 common stock warrants granted to the Investors in the January 2019 Private Financing for cash of approximately \$2.9 million or \$1.94 per share.

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Note 13. Restricted Common Stock, Stock Options, Restricted Stock Units (“RSUs”) and Warrants

The Company provides stock-based compensation to directors, employees and consultants under the 2019 Equity Plan, which was approved by shareholders on October 23, 2019 at the 2019 Annual Meeting of Shareholders. On November 12, 2020 at the 2020 Annual Meeting of Shareholders, the shareholders approved the First Amendment to the 2019 Equity Plan, which raised the total number of shares of the Company’s common stock to 4,061,809 shares. On October 19, 2021, the Company’s shareholders approved the second amendment to its 2019 Equity Plan, which increases the number of shares of the Company’s common stock reserved for issuance by 4,400,000 shares. The Company also provides stock-based compensation to employees, directors and consultants, with non-qualified options and warrants issued outside of the Plan. The Company has reserved 3,554,111 common shares for issuance under the 2019 Plan.

Stock-based Compensation

The Company’s stock-based compensation expenses recognized during the years ended December 31, 2021, 2020 and 2019, were attributable to selling, general and administrative expenses, which are included in the accompanying consolidated statements of operations.

The Company recognized total stock-based compensation expense during the years ended December 31, 2021, 2020 and 2019, from the following categories:

	Years Ended December 31,		
	2021	2020	2019
Time-based restricted stock awards	\$ 4,935	\$ 3,407	\$ 687
Performance-based restricted stock awards	63,556	-	-
Stock option awards	-	-	58
Total stock-based compensation	\$ 68,491	\$ 3,407	\$ 745

Restricted Common Stock Awards

During the year ended December 31, 2021, the Company granted performance-based and time-based restricted stock units (RSUs) to its directors, employees and advisors.

Performance-based RSUs

On August 12, 2021, the Compensation Committee of the Board of Directors of the Company approved a new performance-based restricted stock unit performance plan (the “Performance RSU Plan”) for all executive officers and eligible employees of the Company and its consolidated subsidiaries. In connection with the Performance RSU Plan, the Compensation Committee approved a form of performance-based restricted stock unit award agreement under the 2019 Equity Plan in relation to granting Performance RSUs. The Performance RSUs vest upon the successful completion of specified milestones related to added infrastructure capacity and also adjusted Earnings Before Income Taxes, Depreciation and Amortization (“EBITDA”) targets over a three-year performance period beginning in 2021 and ending on December 31, 2023. The value of the RSUs awarded is established as the fair market value of the Company’s common stock at the time of the grant. The Company recognizes compensation cost when achievement of the milestones and targets are probable, and recognizes the cost over the performance period. The Performance RSUs are settled in shares of the Company’s common stock upon vesting.

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A summary of the Company's unvested performance-based restricted common stock activity in the year ended December 31, 2021 is presented here:

	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested at January 1, 2021	-	\$ -
Granted	4,033,159	\$ 36.69
Vested	(393,574)	\$ 36.67
Forfeited	(235,000)	\$ 36.83
Unvested at December 31, 2021	<u>3,404,585</u>	<u>\$ 36.68</u>

During the year ended December 31, 2021, the Company awarded 4,033,159 performance-based restricted shares of common stock under the 2019 Equity Plan to employees, which are generally eligible to vest upon the successful completion of specified milestones related to added infrastructure capacity and also adjusted EBITDA targets over a three-year performance period beginning in 2021 and ending on December 31, 2023.

As of December 31, 2021, a total of 393,574 Performance RSU Awards for officers and employees were determined by the Compensation Committee to have vested for the successful completion of specified milestones.

The value of performance-based restricted common stock grants is measured based on their fair market value on the date of grant and amortized over their respective estimated implicit service periods. During the year ended December 31, 2021, the fair value of awards granted totaled \$148.0 million and as of December 31, 2021, there was approximately \$47.5 million of total unrecognized compensation cost related to restricted common stock awards, which is expected to be recognized over a remaining weighted-average vesting period of approximately 5 months.

There were no performance-based restricted stock awards granted during the years ended December 31, 2020 and 2019.

Time-based RSUs

A summary of the Company's unvested time-based restricted common stock activity in the year ended December 31, 2021 is as follows:

	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested at December 31, 2020	633,305	\$ 1.27
Vested	(232,283)	\$ 17.94
Granted	212,189	\$ 33.33
Forfeited	(2,650)	\$ 34.08
Unvested at December 31, 2021	<u>610,561</u>	<u>\$ 5.93</u>

During the year ended December 31, 2021, the Company awarded 212,189 restricted shares of time-based common stock under the 2019 Equity Plan to directors, employees and advisors, with a fair value of \$7.1 million, which are generally eligible to vest over a one-year period. During the year ended December 31, 2020, the Company awarded 1,544,359 restricted shares of time-based common stock with a fair value of \$2.0 million, and during the year ended December 31, 2019, the Company awarded 1,542,332 restricted shares of time-based common stock with a fair value of \$2.2 million.

The value of time-based restricted common stock grants is measured based on their fair market value on the date of grant and amortized over their respective vesting periods. As of December 31, 2021, there was approximately \$2.3 million of unrecognized compensation cost related to unvested restricted common stock rights, which is expected to be recognized over a remaining weighted-average vesting period of approximately 3 months.

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Stock Incentive Plan Options

The Company estimates the fair value of the share-based option awards on the date of grant using the Black-Scholes option-pricing model (the “Black-Scholes model”). Using the Black-Scholes model, the value of the award that is ultimately expected to vest is recognized over the requisite service period in the statement of operations. The Company attributes compensation to expense using the straight-line single option method for all options granted.

The Company’s determination of the estimated fair value of share-based payment awards on the date of grant under the Plan is affected by the following variables and assumptions:

- The grant date exercise price – the closing market price of the Company’s common stock on the date of the grant;
- Expected option term – based on historical experience with existing option holders estimated at 3-5 years;
- Estimated dividend rates – based on historical and anticipated dividends over the life of the option;
- Legal term of the option – grants have legal lives of 10 years;
- Risk-free interest rates – with maturities that approximate the expected life of the options granted;
- Calculated stock price volatility – calculated over the expected life of the options granted, which is calculated based on the daily closing price of the Company’s common stock over the period commencing in mid-2017 when the Company changed its strategic focus; and
- Option exercise behaviors – based on actual and projected employee stock option exercises and forfeitures.
- The Company accounts for forfeitures as they occur.

The Company currently provides stock-based compensation to employees, directors and consultants under the Plan. During the year ended December 31, 2021, the Company issued 10,286 shares of its common stock for the exercise of 12,000 stock options. There were no stock options granted during the years ended December 31, 2021, 2020 and 2019, and as of December 31, 2021, there are no stock options outstanding.

Other common stock purchase warrants

During the year ended December 31, 2021, 63,000 warrants were issued to XMS as partial payment for its advisory services in connection with the Whinstone Acquisition. The warrant entitles XMS to purchase from the Company up to 63,000 shares of the Company’s common stock, no par value per share, at a purchase price of \$48.37 per share at any time through August 12, 2026. All warrants issued to prior investors in connection with previously disclosed private placement transactions in 2019 and 2017, had either been exercised or forfeited.

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The following is a summary of outstanding warrants for the year ended December 31, 2021:

	Shares Underlying Options/Warrants	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding and exercisable at December 31, 2020	2,061,770	\$ 32.33	1.1	\$ 6,256
Granted	63,000	\$ 48.37	4.9	-
Exercised	(1,672,892)	\$ 1.94	-	-
Forfeited	(388,878)	\$ 40.00	-	-
Outstanding and exercisable at December 31, 2021	<u>63,000</u>	<u>\$ 48.37</u>	<u>4.6</u>	<u>\$ -</u>

The aggregate intrinsic value in the table above represents the total intrinsic value (the difference between the Company's closing stock price on December 31, 2021 and the exercise price, multiplied by the number of in-the-money options) that would have been received by the option holders, had all option holders been able to, and in fact had, exercised their options on December 31, 2021.

There were no warrants granted during the years ended December 31, 2020 and 2019.

Note 14. Fair Value Measurements

Assets and liabilities measured at fair value on a recurring basis

The Company's assets and liabilities measured at fair value on a recurring basis consisted of the following as of the Whinstone Acquisition Date of May 26, 2021, and December 31, 2021:

	Fair value measured at May 26, 2021			
	Total carrying value at May 26, 2021	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Derivative asset	\$ 13,967	\$ -	\$ -	\$ 13,967
Contingent consideration liability	\$ 82,953	\$ -	\$ -	\$ 82,953
	Fair value measured at December 31, 2021			
	Total carrying value at December 31, 2021	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Derivative asset	\$ 26,079	\$ -	\$ -	\$ 26,079
Contingent consideration liability	\$ 83,928	\$ -	\$ -	\$ 83,928

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Level 3 Assets

Power Supply Agreement

During the year ended December 31, 2021, the Company recorded a derivative asset related to its Power Supply Agreement. The Power Supply Agreement was classified as a derivative asset and measured at fair value on the date of the Company's acquisition of Whinstone, with changes in fair value recognized in change in fair value of derivative asset in operating income or loss on the accompanying consolidated statements of operations. The contract was not designated as a hedging instrument. Prior to the Whinstone Acquisition, the Company did not have any derivative contracts. The estimated fair value of the Company's derivative asset is classified in Level 3 of the fair value hierarchy due to the significant unobservable inputs utilized in the valuation. Specifically, our discounted cash flow estimation models contain quoted commodity exchange spot and forward prices and are adjusted for basis spreads for load zone-to-hub differentials through the term of the Power Supply Agreement, which ends in December 2030. The discount rate utilized of approximately 21% includes observable market inputs, but also includes unobservable inputs based on qualitative judgment related to company-specific risk factors.

The terms of the Power Supply Agreement require margin-based collateral, calculated as exposure resulting from fluctuations in the market cost rate of electricity versus the fixed price stated in the contract. The margin-based collateral requirement to the Company is zero as of December 31, 2021.

Level 3 Liabilities

Business Combination Contingent Consideration

The Company recorded a Level 3 financial liability during the year ended December 31, 2021, relating to the contingent consideration arrangement arising from the acquisition of Whinstone. Contingent consideration represents an obligation of the Company to transfer cash to the Seller when Whinstone realizes or receives a benefit from utilization of certain defined power credits. See Note 4, "Acquisitions". The Company estimated the fair value of the contingent consideration using a discounted cash flow analysis, which includes estimates of both the timing and amounts of potential future power credits. These estimates were determined using the Company's historical consumption quantities and patterns combined with management's expectations of its future consumption requirements, which require significant judgment and depend on various factors outside the Company's control, such as construction delays. The discount rate of approximately 2.5% includes observable market inputs, such as TXU's parent company's Standard & Poor's credit rating of BB, but also includes unobservable inputs such as interest rate spreads, which were estimated based on qualitative judgment related to company-specific risk factors. Specifically, due to the power credits being subordinated obligations for TXU's parent, we used one credit rating lower than BB in our yield curve to estimate a reasonable interest rate spread to determine the cost of debt input. The significant assumptions used to estimate fair value of the derivative contract include a discount rate of 21%, which reflected the nature of the contract as it relates to the risk and uncertainty of the estimated future mark-to-market adjustments, forward price curves of the power supply, broker/dealer quotes and other similar data obtained from quoted market prices or independent pricing vendors. Although these estimates are based on management's best knowledge of current events, the estimates could change significantly from period to period. Actual results that differ from the assumptions used and any changes to the significant assumptions and unobservable inputs used could have a material impact on future results of operations.

Changes in Level 3 assets and liabilities measured at fair value on a recurring basis

Unobservable inputs were used to determine the fair value of positions that the Company has classified within the Level 3 category. Unrealized gains and losses associated with the asset within the Level 3 category includes changes in fair value that were attributable to unobservable (e.g., changes in unobservable long-dated volatilities) inputs.

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The following table presents the changes in the estimated fair value of the derivative asset measured using significant unobservable inputs (Level 3) for the year ended December 31, 2021 (in thousands):

	Derivative Asset
Balance as of January 1, 2021	\$ -
Acquisition of Whinstone	13,967
Change in fair value	12,112
Balance as of December 31, 2021	<u>\$ 26,079</u>

For the year ended December 31, 2021 there was a change of approximately \$12.1 million in Level 3 assets measured at fair value. Additionally, during the year ended December 31, 2021, power sales back to ERCOT through its demand response programs of \$6.5 million were recorded in change in fair value of derivative asset in the consolidated statements of operations. There were no Level 3 assets for the year ended December 31, 2020.

The following table presents the changes in the estimated fair value of our liability for contingent consideration measured using significant unobservable inputs (Level 3) for the year ended December 31, 2021 (in thousands):

	Contingent Consideration Liability
Balance as of January 1, 2021	\$ -
Acquisition of Whinstone	82,953
Change in fair value	975
Balance as of December 31, 2021	<u>\$ 83,928</u>

For the year ended December 31, 2021 the change in Level 3 liabilities measured at fair value was approximately \$1.0 million. There were no Level 3 liabilities for the year ended December 31, 2020. Our estimated liability for contingent consideration represents potential payments of additional consideration for the Whinstone Acquisition, payable if Whinstone realizes or receives a benefit from utilization of certain defined power credits. Changes in the fair value of contingent consideration are recorded in the consolidated statements of operations within change in fair value of contingent consideration.

There were no transfers of financial instruments between Level 1, Level 2 and Level 3 during the period presented.

Assets and Liabilities Not Measured at Fair Value on a Recurring Basis

In addition to assets and liabilities that are measured at fair value on a recurring basis, we also measure certain assets and liabilities at fair value on a nonrecurring basis. Our non-financial assets, including goodwill, intangible assets, operating lease right of use assets, and property, plant and equipment, are measured at fair value when there is an indication of impairment and the carrying amount exceeds the asset's projected undiscounted cash flows. These assets are recorded at fair value only when an impairment charge is recognized.

Note 15. Commitments and Contingencies

Commitments

Operating Leases

The Company leases its primary office locations and data center hosting facilities, as well as a ground lease, under noncancelable lease agreements that expire on varying dates through 2030. See Note 11, "Leases".

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Water Reservation Agreement

Whinstone executed a water reservation agreement in April 2021 with the lessor of the ground lease to obtain a certain quantity of water from a nearby lake to be used by the Company for commercial purposes. We use the water for evaporative cooling in our data center facility. The initial term of the agreement runs through December 2027 and requires annual payments of approximately \$1.0 million.

The Company concluded that the agreement was not a lease or a derivative instrument. Because the Company obtained an additional right of use for the reserved water amount, and the charges were increased by a standalone price commensurate with the additional water use rights and at market rates, the water reservation agreement was determined to be a lease modification accounted for as a separate contract. As such, the fees of the water reservation agreement were excluded from the lease payments of the ground lease and the water reservation agreement was accounted for as a separate executory contract.

Coinmint Co-location Mining Services Agreement

On April 8, 2020, the Company entered into an agreement with Coinmint, (the "Coinmint Agreement"), pursuant to which Coinmint agreed to provide up to approximately 9.5 MW of power and to perform all maintenance necessary to operate Riot's miners at the Coinmint facility. In exchange, Coinmint is reimbursed for direct production expenses and receives a performance fee based on the net cryptocurrencies generated by Riot's miners deployed at the Coinmint facility. The initial term of the Coinmint Agreement was six months with automatic renewals for subsequent three month terms until and unless terminated as provided in the agreement.

Contingencies

The Company, and its subsidiaries, are subject at times to various claims, lawsuits and governmental proceedings relating to the Company's business and transactions arising in the ordinary course of business. The Company cannot predict the final outcome of such proceedings. Where appropriate, the Company vigorously defends such claims, lawsuits and proceedings. Some of these claims, lawsuits and proceedings seek damages, including, consequential, exemplary or punitive damages, in amounts that could, if awarded, be significant. Certain of the claims, lawsuits and proceedings arising in ordinary course of business are covered by the Company's insurance program. The Company maintains property and various types of liability insurance in an effort to protect the Company from such claims. In terms of any matters where there is no insurance coverage available to the Company, or where coverage is available and the Company maintains a retention or deductible associated with such insurance, the Company may establish an accrual for such loss, retention or deductible based on current available information. In accordance with accounting guidance, if it is probable that an asset has been impaired or a liability has been incurred as of the date of the financial statements, and the amount of loss is reasonably estimable, then an accrual for the cost to resolve or settle these claims is recorded by the Company in the accompanying consolidated balance sheets. If it is reasonably possible that an asset may be impaired as of the date of the financial statement, then the Company discloses the range of possible loss. Expenses related to the defense of such claims are recorded by the Company as incurred and included in the accompanying consolidated statements of operations. Management, with the assistance of outside counsel, may from time to time adjust such accruals according to new developments in the matter, court rulings, or changes in the strategy affecting the Company's defense of such matters. On the basis of current information, the Company does not believe there is a reasonable possibility that, other than with regard to the Class Action described below, any material loss, if any, will result from any claims, lawsuits and proceedings to which the Company is subject to either individually, or in the aggregate.

Shareholder Class Action Suit

On February 17, 2018, Creighton Takata filed an action asserting putative class action claims on behalf of the Company's stockholders in the United District Court for the District of New Jersey, *Takata v. Riot Blockchain Inc., et al.*, Case No. 3: 18-cv-02293. The complaint asserts violations of federal securities laws under Section 10(b) and Section 20(a) of the Securities Exchange Act of 1934 on behalf of a putative class of stockholders that purchased stock from November 13, 2017 through February 15, 2018. The complaint alleges that the Company and certain of its officers and directors made, caused to be made, or failed to correct false and/or misleading statements in press releases and public filings regarding its business plan in connection with its cryptocurrency business. The complaint requests damages in unspecified amounts, costs and fees of bringing the action, and other unspecified relief.

On April 18, 2018, Joseph J. Klapper, Jr., filed a complaint against Riot Blockchain, Inc., and certain of its officers and directors in the United District Court for the District of New Jersey (*Klapper v. Riot Blockchain Inc., et al.*, Case No. 3: 18-cv-8031). The complaint contained substantially similar allegations and the same claims as those filed by Mr. Takata, and requests damages in unspecified amounts, costs and fees of bringing the action, and other unspecified relief. On November 6, 2018, the court in the *Takata* action issued an order consolidating *Takata* with *Klapper* into a single putative class action. The court also appointed Dr. Golovac as Lead Plaintiff and Motely Rice as Lead Counsel of the consolidated class action.

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Lead Plaintiff filed a consolidated complaint on January 15, 2019. Defendants filed motions to dismiss on March 18, 2019. In lieu of opposing defendants' motions to dismiss, Lead Plaintiff filed another amended complaint on May 9, 2019. Defendants filed multiple motions to dismiss the amended complaint starting on September 3, 2019.

On April 30, 2020, the court granted the motions to dismiss, which resulted in the dismissal of all claims without prejudice. On December 24, 2020, Lead Plaintiff filed another amended complaint. Defendants filed multiple motions to dismiss the amended complaint starting on February 8, 2021, which have been fully briefed. On February 28, 2022, the court issued an order instructing the parties to submit supplemental briefing by March 14, 2022 on particular issues raised in the motions to dismiss. Because this litigation is still at this early stage, we cannot reasonably estimate the likelihood of an unfavorable outcome or the magnitude of such an outcome, if any.

Shareholder Derivative Cases

On April 5, 2018, Michael Jackson filed a shareholder derivative complaint on behalf of the Company in the Supreme Court of the State of New York, County of Nassau, against certain of the Company's officers and directors, as well as against an investor (*Jackson v. Riot Blockchain, Inc., et al.*, Case No. 604520/18). The complaint contains similar allegations to those contained in the shareholder class action complaints and seeks recovery for alleged breaches of fiduciary duty, unjust enrichment, waste of corporate assets, abuse of control and gross mismanagement. The complaint seeks unspecified monetary damages and corporate governance changes. At the last preliminary conference, the court adjourned the conference until June 21, 2022 in lieu of staying the action. Defendants do not anticipate any other activity on this case until the next preliminary conference.

On May 22, 2018, two additional shareholder derivative complaints were filed on behalf of the Company in the Eighth Judicial District Court of the State of Nevada in and for the County of Clark (*Kish v. O'Rourke, et al.*, Case No. A-18-774890-B & *Gaft v. O'Rourke, et al.*, Case No. A-18-774896-8). The two complaints make identical allegations, which are similar to the allegations contained in the shareholder class action complaints. The shareholder derivative plaintiffs also seek recovery for alleged breaches of fiduciary duty, unjust enrichment, waste of corporate assets, and aiding abetting a breach of fiduciary duty. The complaints seek unspecified monetary damages and corporate governance changes.

On September 24, 2018, the court entered an order consolidating the *Gaft* and *Kish* actions, which is now styled as *In re Riot Blockchain, Inc. Shareholder Derivative Litigation*, Case No. A-18-774890-B. The plaintiffs filed a consolidated complaint on March 15, 2019. The consolidated action has been temporarily stayed until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

On October 9, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Eastern District of New York (*Rotkowitz v. O'Rourke, et al.*, Case No. 2:18-cv-05632). As with the other shareholder derivative actions, the shareholder plaintiff alleges breach of fiduciary duty, waste of corporate assets, and unjust enrichment against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. The parties filed a motion with the court to temporarily stay this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey. In response, the court dismissed the action without prejudice with leave to refile a complaint following the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

On October 22, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Southern District of New York (*Finitz v. O'Rourke, et al.*, Case No. 1:18-cv-09640). The shareholder plaintiffs allege breach of fiduciary duty, waste of corporate assets, and unjust enrichment against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. Upon the parties' stipulation, the court issued an order temporarily staying this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

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On December 13, 2018, another shareholder derivative complaint was filed on behalf of the Company in the United District Court for the Northern District of New York (*Monts v. O'Rourke, et al.*, Case No. 1:18-cv-01443). The shareholder plaintiffs allege claims for violation of Section 14(a) of the Securities Exchange Act of 1934, breach of fiduciary duties, unjust enrichment, waste of corporate assets, and aiding and abetting against certain of the Company's officers, directors, and an investor. The complaint's allegations are substantially similar to those made in the other securities class action and shareholder derivative complaints filed in 2018. The complaint seeks unspecified monetary damages and corporate governance changes. Upon the parties' stipulation, the court issued an order temporarily staying this action until the resolution of the motion(s) to dismiss in the securities class action pending in the United District Court for the District of New Jersey.

Defendants intend to vigorously contest plaintiffs' allegations in the shareholder derivative actions and plaintiffs' right to bring the action in the name of Riot Blockchain. But because this litigation is still at this early stage, we cannot reasonably estimate the likelihood of an unfavorable outcome or the magnitude of such an outcome, if any.

Note 16. Income taxes

The components of the loss from continuing operations before income taxes for the years ended December 31, 2021, 2020 and 2019 are as follows (in thousands):

	For the years ended December 31,		
	2021	2020	2019
Domestic	\$ (7,672)	\$ (12,667)	\$ (20,446)
Foreign	—	—	—
Loss from Continuing Operations before Income Taxes	\$ (7,672)	\$ (12,667)	\$ (20,446)

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The components of income tax benefit (expense) are as follows (in thousands):

	As of December 31,		
	2021	2020	2019
Current:			
US Federal	\$ —	\$ —	\$ —
US State	(254)	—	—
Foreign	—	—	—
Total current benefit (expense)	<u>\$ (254)</u>	<u>\$ —</u>	<u>\$ —</u>
Deferred:			
US Federal	\$ —	\$ —	\$ 117
US State	—	—	26
Foreign	—	—	—
Total deferred benefit	<u>—</u>	<u>—</u>	<u>143</u>
Total benefit (expense) for income taxes	<u>\$ (254)</u>	<u>\$ —</u>	<u>\$ 143</u>

The tax effects of temporary differences and tax loss and credit carry forwards that give rise to significant portions of deferred tax assets and liabilities at December 31, 2021 and 2020 are comprised of the following (in thousands):

	As of December 31,	
	2021	2020
Deferred income tax assets:		
Net operating loss carryforwards	\$ 64,394	\$ 51,938
Research and development credit carryforwards	1,063	1,063
Long-term investments	3,402	-
Operating lease liabilities	1,454	-
Stock option expense	15,827	1,253
Impairment of mining related assets and other	10,504	803
Total deferred tax assets	<u>96,644</u>	<u>55,057</u>
Valuation allowance	<u>(59,039)</u>	<u>(55,057)</u>
Net deferred tax assets	37,605	-
Deferred income tax liabilities:		
Derivative asset	(5,477)	-
Property and equipment and other	(32,128)	-
Net deferred tax assets (liabilities)	<u>\$ -</u>	<u>\$ -</u>

The Company has approximately \$264.9 million and \$219.6 million of federal and state tax Net Operating Losses (“NOLs”), respectively, that may be available to offset future taxable income. Federal and state net operating loss carryforwards of \$125.2 million and \$147.1 million, respectively, if not utilized, expire between 2026 and 2037. Under the Tax Cuts and Jobs Act, \$139.7 million federal and \$72.5 million state NOLs incurred after December 31, 2017 are carried forward indefinitely, but may be limited in utilization to 80% of taxable income. The Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”) signed in to law on March 27, 2020, provided that NOLs generated in a taxable year beginning in 2018, 2019, or 2020, may be carried back five years and forward indefinitely. In addition, the 80% taxable income limitation is temporarily removed, allowing NOLs to fully offset net taxable income.

Furthermore, as a result of changes in the ownership of our common stock and changes in our business operations, our ability to use our federal NOLs may be limited under Internal Revenue Code Section 382 and 383. State NOLs are subject to similar limitations in many cases. As a result, our substantial NOLs may not have any value to us.

The statute of limitations for assessment by the IRS and state tax authorities is open for tax years ending December 31, 2017 through 2021, although carryforward attributes that were generated prior to tax year 2017 may still be adjusted upon examination by the IRS or state tax authorities if they either have been or will be used in a future period. Currently, no federal or state income tax returns are under examination by the respective taxing authorities.

In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the period in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and taxing strategies in making this assessment. In case the deferred tax assets will not be realized in future periods, the Company has provided a valuation allowance for the full amount of the deferred tax assets at December 31, 2021 and 2020. The valuation allowance increased by approximately \$4.0 million during the year ended December 31, 2021.

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The expected tax expense (benefit) based on the U.S. federal statutory rate is reconciled with actual tax expense (benefit) as follows (in thousands):

	For the years ended December 31,		
	2021	2020	2019
Statutory federal income tax expense (benefit)	\$ (1,611)	\$ (2,660)	\$ (4,293)
State taxes, net of federal tax expense (benefit)	347	(471)	(664)
Nondeductible/nontaxable items	1,732	(45)	1,142
Tax return to provision true-up	313	(8,737)	-
State tax rate change	(1,897)	2,231	-
Other	-	-	195
Change in valuation allowance	1,370	9,682	3,477
Income taxes expense (benefit)	<u>\$ 254</u>	<u>\$ -</u>	<u>\$ (143)</u>

The Company has not identified any uncertain tax positions requiring a reserve as of December 31, 2021 and 2020. The Company's policy is to recognize interest and penalties that would be assessed in relation to the settlement value of unrecognized tax benefits as a component of income tax expense. The Company did not accrue either interest or penalties for the years ended December 31, 2021 and 2020.

The Company is subject to U.S. federal income tax and primarily Florida, Colorado and Texas state income tax. The Company has not been under tax examination in any jurisdiction for the years ended December 31, 2021 and 2020.

Note 17. Animal Health License Agreements

Ceva License Agreement

In July 2012, the Company entered into an exclusive license agreement (the "License Agreement") with Ceva Santé Animale S.A. ("Licensee"), under which the Company granted the Licensee an exclusive royalty-bearing license, until December 31, 2028, to the Company's intellectual property and other assets, including both (a) the Company's patent rights and know-how, relating to recombinant single chain reproductive hormone technology for use in non-human mammals (the "Company's Animal Health Assets") and (b) the technology licensed to the Company by Washington University in St. Louis ("WU"). The WU license agreement expired under its terms in 2020, with no impact on the License Agreement. The License Agreement contains termination provisions as defined in the License Agreement.

Under the License Agreement, the Licensee obtained a worldwide exclusive license to develop, seek regulatory approval for and offer to sell, market, distribute, import and export luteinizing hormone ("LH") and/or follicle-stimulating hormone ("FSH") products for bovine (cattle), equine and swine in the field of the assistance and facilitation of reproduction in bovine, equine and swine animals. The Company also granted the Licensee an option and right of first refusal to develop additional animal health products outside of the licensed field of use or any diagnostic pregnancy detection tests for non-human mammals.

Under the License Agreement as of December 31, 2021, the Company would be entitled to receive future payments if Ceva achieves certain regulatory approvals as further outlined in the License Agreement.

The upfront license fees received from the License Agreement have been recorded as deferred revenue and are amortized over the term of the License Agreement. License fees revenue totaling a net of approximately \$1.6 million commenced being amortized in July 2012. As of December 31, 2021, deferred revenue of \$0.1 million has been classified as a current liability and \$0.6 million has been classified as a long-term liability. The current liability represents the next twelve months' portion of the license fees revenue. For each of the years ended December 31, 2021, 2020 and 2019, approximately \$0.1 million was recorded as the amortized license fee revenue.

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Note 18. Segment Information

The Company applies ASC 280, *Segment Reporting*, in determining its reportable segments. The Company has three reportable segments: Mining, Hosting, and Engineering. The guidance requires that segment disclosures present the measure(s) used by the Chief Operating Decision Maker (“CODM”) to decide how to allocate resources and for purposes of assessing such segments’ performance. The Company’s CODM is comprised of several members of its executive management team who use revenue and cost of revenues of our three reporting segments to assess the performance of the business of our reportable operating segments.

No operating segments have been aggregated to form the reportable segments. The Company does not allocate all assets to the reporting segments as these are managed on an entity-wide basis. Therefore, the Company does not separately disclose the total assets of its reportable operating segments. \$29.4 million of goodwill from the ESS Metron acquisition is allocated to our Engineering segment and \$260.9 million of goodwill from the Whinstone Acquisition is allocated to our Hosting segment.

The Mining segment generates revenue from the cryptocurrency the Company earns through its mining activities. The Hosting segment generates revenue from long-term customer contracts for the provision/consumption of electricity, construction of infrastructure, operation of data centers and maintenance/management of computing capacity from the Company’s high performance data center facility in Rockdale, Texas. The Engineering segment generates revenue through customer contracts for custom engineered electrical products.

The Hosting segment purchases custom engineered electrical products from the Engineering segment in the ordinary course of business. The revenue and cost of revenues from intersegment transactions have been eliminated in the consolidated statements of operations in accordance with US GAAP. For purposes of segment reporting, the revenues and cost of revenues for each segment are presented in the table below on a stand-alone basis, with the intersegment eliminations presented separately, such that total revenue and total cost of revenue total to the consolidated statements of operations. All other revenues are from external customers. No single customer or related group of customers contributed 10% or more of the Company’s total revenue during the years ended December 31, 2021, 2020 and 2019. However, two customers accounted for approximately 97% of the Company’s Hosting revenue.

For the year ended December 31, 2021, approximately 75% of the Company’s Mining revenue was generated from the Coinmint Facility in New York, and the remaining 25% was generated from our Whinstone Facility in Rockdale, Texas.

The following table details revenue and cost of revenues for the Company’s reportable segments for the years ended December 31, 2021, 2020 and 2019, and reconciles to net income (loss) in the consolidated statements of operations (in thousands):

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	Years Ended December 31,		
	2021	2020	2019
Reportable segment revenue:			
Revenue, net - mining	\$ 184,422	\$ 11,984	\$ 6,741
Revenue, net - hosting	24,546	-	-
Revenue, net - engineering	5,265	-	-
Other revenue	97	97	96
Eliminations	(1,087)	-	-
Total segment and consolidated revenue	213,243	12,081	6,837
Reportable segment cost of revenue (exclusive of depreciation and amortization shown below):			
Cost of revenues - mining	45,513	6,251	6,097
Cost of revenues - hosting	32,998	-	-
Cost of revenues - engineering	4,351	-	-
Eliminations	(769)	-	-
Total segment and consolidated cost of revenues (exclusive of depreciation and amortization shown below)	82,093	6,251	6,097
Reconciling Items:			
Acquisition-related costs	(21,198)	-	-
Selling, general and administrative	(87,429)	(10,251)	(9,159)
Depreciation and amortization	(26,324)	(4,494)	(119)
Change in fair value of derivative asset	18,626	-	-
Change in fair value of contingent consideration	(975)	-	-
Realized gain on sale/exchange of cryptocurrencies	253	5,184	665
Impairment of intangible rights acquired	-	-	(700)
Impairment of long-term investment	-	(9,413)	-
Impairment of cryptocurrencies	(36,462)	(989)	(844)
Loss on issuance of convertible notes, common stock and warrants	-	-	(6,155)
Change in fair value of warrant liability	-	-	(2,869)
Change in fair value of convertible notes	-	-	(3,896)
Reversal of registration rights penalty	-	1,358	-
Gain on deconsolidation of Tess	-	-	1,139
Gain (loss) on sale of equipment	-	29	-
Interest income (expense)	-	85	-
Interest expense	(296)	-	(122)
Other income (expense)	2,378	(6)	874
Realized gain on sale/exchange of long-term investment	26,260	-	-
Unrealized loss on marketable equity securities	(13,655)	-	-
Current income tax expense	(254)	-	-
Deferred income tax benefit	-	-	143
Net loss	\$ (7,926)	\$ (12,667)	\$ (20,303)

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Note 19. Subsequent Events:

Restricted stock

Subsequent to December 31, 2021, the Company granted 43,149 time-based restricted stock units with a fair value of approximately \$0.8 million and 365,500 performance-based restricted stock units with a fair value of approximately \$7.3 million.

Subsequent to December 31, 2021, 937,530 shares of common stock were issued to the Company's officers and employees in settlement of an equal number of fully vested restricted stock units awarded to such individuals by the Company pursuant to grants made under the Company's 2019 Equity Plan. The Company withheld 414,441 of these shares at a fair value of approximately \$8.2 million, to cover withholding taxes related to the settlement of these vested restricted stock units, as permitted by the 2019 Equity Plan.

Preferred stock

Subsequent to December 31, 2021, the remaining 2,199 shares of the Company's 0% Series B Convertible Preferred Stock were converted to 2,199 shares of its common stock.

Ground lease and water reservation agreement amendments

Subsequent to December 31, 2021, the Company executed a third lease amendment to the ground lease for the Whinstone facility, to add to the existing 100-acre tract of land, a second contiguous 100-acre tract of real property for an additional \$0.9 million in annual payments. The initial term of the lease is scheduled to expire on January 31, 2032. Concurrent with this third amendment, the Company executed a first amendment to the water reservation agreement to obtain additional water from a nearby lake to be used by the Company for commercial purposes, such as evaporative cooling in our data center facility, for an additional \$1.0 million in annual payments. The term of the original water reservation agreement was reset for a period of twelve years from the original commencement date of April 2021, now expiring on January 31, 2032.

The Company has evaluated all events that occurred after the balance sheet date through the date when the financial statements were issued. No other significant recognized or non-recognized subsequent events were noted.

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ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer (principal executive officer) and our Chief Financial Officer (principal financial officer), has evaluated the effectiveness of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report to ensure that the information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that information required to be disclosed in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosures. Based on this evaluation, our management concluded that our disclosure controls and procedures were not effective at the reasonable assurance level as of December 31, 2021 due to the material weaknesses described below.

Our management excluded from its assessment of effectiveness of our internal control over financial reporting the internal controls of our two recently acquired significant subsidiaries, Whinstone, which we acquired as of May 26, 2021, and ESS Metron, which we acquired as of December 1, 2021. We have included the financial results of these subsidiaries in the consolidated financial statements from the date of acquisition. Total assets (excluding goodwill and intangible assets, net) and total revenues related to Whinstone and ESS Metron that were excluded from our assessment of internal control over financial reporting collectively represented approximately 20.4% and 13.5% of our consolidated total assets and total revenue as of and for the year ended December 31, 2021, respectively. Our management will include the internal controls of Whinstone and ESS Metron in its assessment of the effectiveness of our internal control over financial reporting as of December 31, 2022.

As further discussed below under "Management's Report on Internal Control Over Financial Reporting," management has identified material weaknesses in our information technology (IT) general controls (collectively, "ITGCs") and related IT-dependent process level controls and business combination accounting controls, which are part of our internal control over financial reporting. We have developed a remediation plan for each weakness, which is described below under "Remediation." Further, the report of our independent registered public accounting firm for the fiscal year ended December 31, 2021, Marcum LLP, regarding its audit of our internal control over financial reporting as of December 31, 2021, which is included below under the heading "Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting," expresses an adverse opinion on our internal control over financial reporting as of December 31, 2021.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost benefit relationship of possible controls and procedures.

Changes in Internal Control

We periodically review our internal control over financial reporting as part of our efforts to ensure compliance with the requirements of Section 404 of the Sarbanes-Oxley Act of 2002. In addition, we routinely review our system of internal control over financial reporting to identify potential changes to our processes and systems that may improve controls and increase efficiency, with the goal of establishing and maintaining an effective internal control environment. Changes may include such activities as implementing new, more efficient systems, consolidating the activities of business units, migrating certain processes to our shared services organizations, formalizing policies and procedures, improving segregation of duties and increasing monitoring controls. In addition, when we acquire new businesses, we incorporate our controls and procedures into the acquired business as part of our integration activities. During the fiscal year ended December 31, 2021, we completed acquisitions of two significant subsidiaries, Whinstone and ESS Metron, and began the process of integrating these acquired businesses into our own, including incorporating our system of internal controls and procedures with those of our

acquired businesses. As part of our integration of these acquired businesses, we are in the process of incorporating our controls and procedures with respect to Whinstone's and ESS Metron's operations, which we expect to complete as of December 31, 2022. Other than the system and related process changes associated with these two acquisitions, there have been no changes in our internal control over financial reporting that occurred during the fiscal year ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act.

Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of annual or interim consolidated financial statements will not be prevented or detected on a timely basis.

Management utilized the criteria established in the Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) to assess the effectiveness of our internal control over financial reporting as of December 31, 2021. Based on this evaluation, management identified the following weaknesses in internal control over financial reporting as described below:

- 1) The Company did not design and/or implement user access controls to ensure appropriate segregation of duties that would adequately restrict user and privileged access to the financially relevant systems and data to the appropriate Company personnel.
- 2) The Company did not design and implement program change management controls for certain financially relevant systems to ensure that IT program and data changes affecting the Company's (i) financial IT applications, (ii) digital currency cold storage wallets and mining equipment, and (iii) underlying accounting records, are identified, tested, authorized and implemented appropriately to validate that data produced by its relevant IT system(s) were complete and accurate. Automated process-level controls and manual controls that are dependent upon the information derived from such financially relevant systems were also determined to be ineffective as a result of such deficiency.
- 3) The Company did not properly design or implement controls to ensure that data received from third parties is complete and accurate. Such data is relied on by the Company in determining amounts pertaining to revenue – mining and cryptocurrency assets held is complete and accurate. Automated process-level controls and manual controls that are dependent upon the information derived from such financially relevant systems were also determined to be ineffective as a result of such deficiency.
- 4) The Company did not properly design and implement controls to ensure that certain inputs and assumptions utilized in the valuation of intangible assets identified in its accounting for business combinations were reasonable in the circumstances. Such deficiency also resulted in material adjustments required to the Company's provision for income taxes.

These material weaknesses create a reasonable possibility that a material misstatement to our consolidated financial statements or disclosures would not be prevented or detected on a timely basis.

Our independent registered public accounting firm, Marcum LLP, has issued an audit report on management's assessment of internal control over financial reporting as of December 31, 2021. The report of Marcum LLP, which expresses an adverse opinion on the Company's internal control over financial reporting as of December 31, 2021, is included below under the heading "Report of Independent Registered Public Accounting Firm on Internal Control over Financial Reporting".

Remediation

Our Board of Directors and management take internal control over financial reporting and the integrity of our financial statements seriously. Management continues to work to improve its controls related to our material weaknesses, specifically relating to user access and change management surrounding the Company's IT systems and applications. Management will continue to implement measures to remediate material weaknesses, such that these controls are designed, implemented, and operating effectively. The remediation actions include: (i) enhancing design and documentation related to both user access and change management processes and control activities (ii) developing and communicating additional policies and procedures to govern the area of IT change management (iii) develop robust processes to validate all data that is received from third-parties and relied upon to generate financial statements. In order to achieve the timely implementation of the above, Management has commenced the following actions and will continue to assess additional opportunities for remediation on an ongoing basis.

- Engaging a third-party specialist to assist Management with improving the Company's overall control environment, focusing on change management, access, and financial reporting controls
- Implementing new applications and systems that are aligned with Management's focus on creating strong internal controls, as well as complete and accurate financial statements
- Implementing more robust policies and procedures, relating to third-party data as well as the inputs and assumptions utilized in estimates, including in business combination valuations and assessments, to ensure the reliability of controls and financial reporting
- Continuing to increase headcount across the Company, with a particular focus on hiring individuals with strong SOX and internal control backgrounds.

However, the material weaknesses in our internal control over financial reporting will not be considered remediated until other ITGCs and process-level controls operate for a sufficient period of time and can be tested and concluded by management to be designed and operating effectively. We cannot provide any assurance that these remediation efforts will be successful or that our internal control over financial reporting will be effective as a result of these efforts. In addition, we continue to evaluate and work to improve our internal control over financial reporting related to the identified material weaknesses, management may determine to take additional measures to address control deficiencies or determine to modify the remediation plan described above.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM
ON INTERNAL CONTROL OVER FINANCIAL REPORTING

To the Stockholders and Board of Directors of
Riot Blockchain, Inc.

Adverse Opinion on Internal Control over Financial Reporting

We have audited the Riot Blockchain Inc. and Subsidiaries (the "Company") internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weaknesses described in the following paragraph on the achievement of the objectives of the control criteria, the Company has not maintained effective internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

A material weakness is a control deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in "Management's Annual Report on Internal Control Over Financial Reporting":

- 1) The Company did not design and/or implement user access controls to ensure appropriate segregation of duties that would adequately restrict user and privileged access to the financially relevant systems and data to the appropriate Company personnel.
- 2) The Company did not design and implement program change management controls for certain financially relevant systems to ensure that IT program and data changes affecting the Company's (i) financial IT applications, (ii) digital currency cold storage wallets and mining equipment, and (iii) underlying accounting records, are identified, tested, authorized and implemented appropriately to validate that data produced by its relevant IT system(s) were complete and accurate. Automated process-level controls and manual controls that are dependent upon the information derived from such financially relevant systems were also determined to be ineffective as a result of such deficiency.
- 3) The Company did not properly design or implement controls to ensure that data received from third parties is complete and accurate. Such data is relied on by the Company in determining amounts pertaining to revenue-cryptocurrency mining and cryptocurrency assets held is complete and accurate. Automated process-level controls and manual controls that are dependent upon the information derived from such financially relevant systems were also determined to be ineffective as a result of such deficiency.
- 4) The Company did not properly design and implement controls to ensure that certain inputs and assumptions utilized in valuation of intangibles assets identified in its accounting for business combinations were reasonable in the circumstances. Such deficiency also resulted in material adjustments required to the Company's provision for income taxes.

These material weaknesses were considered in determining the nature, timing and extent of audit tests applied in our audit of the fiscal 2021 consolidated financial statements, and this report does not affect our report dated March 16, 2022 on those financial statements.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets as of December 31, 2021 and 2020 and the related consolidated statements of operations, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2021, and the related notes, of the Company and our report dated March 16, 2022 expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "Management Annual Report on Internal Control Over Financial Reporting". Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of the inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that degree of compliance with the policies or procedures may deteriorate.

/s/ Marcum LLP

Marcum LLP

Los Angeles, CA
March 16, 2022

ITEM 9B. OTHER INFORMATION.

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Information required to be disclosed by this Item is incorporated into this Annual Report on Form 10-K by reference from the section entitled “Directors, Named Executive Officers and Corporate Governance” contained in our definitive proxy statement for our 2022 annual meeting of stockholders, which we intend to file within 120 days of the end of our fiscal year ended December 31, 2021.

ITEM 11. EXECUTIVE COMPENSATION.

Information required to be disclosed by this Item is incorporated into this Annual Report on Form 10-K by reference from the section entitled “Executive Compensation” contained in our definitive proxy statement for our 2022 annual meeting of stockholders, which we intend to file within 120 days of the end of our fiscal year ended December 31, 2021.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

Except as set forth below regarding securities authorized under our equity compensation plans, the information required to be disclosed by this Item relating to security ownership of certain beneficial owners and management is incorporated herein by reference to the sections titled “Share Ownership” contained in our definitive proxy statement for our 2022 annual meeting of stockholders, which we intend to file within 120 days of the end of our fiscal year ended December 31, 2021.

Securities Authorized under Equity Compensation Plans Information

The Company currently has one equity compensation plan, The Riot Blockchain, Inc. 2019 Equity Incentive Plan, as amended (the “2019 Plan”). On October 19, 2021, the Company’s shareholders approved the second amendment to its 2019 Equity Plan, which increased the number of shares of the Company’s common stock reserved for issuance by 4,400,000 shares. The Company currently provides stock-based compensation to employees, directors and consultants, under the 2019 Plan, as approved by the Company’s shareholders on October 23, 2019, and on November 12, 2020 with respect to the first amendment to the 2019 Plan and on October 19, 2021 with respect to the second amendment to the 2019 Plan. The Company’s previous 2017 Stock Incentive Plan, as amended (the “2017 Plan”), was replaced by the 2019 Plan, with the 2017 Plan continuing to govern the then outstanding grants and awards for 12,000 options and 114,103 shares of restricted common stock. No additional grants can be made under the 2017 Plan. The Company has reserved 3,554,111 common shares for issuance under the 2019 Plan.

The following table provides information as of December 31, 2021, about the shares of common stock that may be issued upon the vesting of performance and non-performance based restricted common stock under the 2019 Plan:

<u>Plan Category</u>	<u>Number of securities to be issued upon exercise of outstanding options and restricted common stock</u>	<u>Weighted average exercise price of outstanding options</u>	<u>Number of securities remaining available for future issuance</u>
Equity compensation plans approved by security holders	4,182,298	\$ 31.86	3,554,111
Equity compensation plans not approved by security holders	—	—	—
Total	<u>4,182,298</u>	<u>\$ 31.86</u>	<u>3,554,111</u>

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

Information required to be disclosed by this Item is incorporated into this Annual Report on Form 10-K by reference from the section entitled “Certain Relationships and Related Transactions, and Director Independence” contained in our definitive proxy statement for our 2022 annual meeting of stockholders, which we intend to file within 120 days of the end of our fiscal year ended December 31, 2021.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

Information required to be disclosed by this Item is incorporated into this Annual Report on Form 10-K by reference from the section entitled “Principal Accountant Fees and Services” contained in our definitive proxy statement for our 2022 annual meeting of stockholders, which we intend to file within 120 days of the end of our fiscal year ended December 31, 2021.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES.

We have filed the following documents as part of this Annual Report on Form 10-K for the fiscal year ended December 31, 2021:

1. *Consolidated Financial Statements*

Report of Independent Registered Public Accounting Firm (PCAOB 00688); Marcum LLP, Los Angeles, CA	F-1
Consolidated Balance Sheets at December 31, 2021 and 2020	F-4
Consolidated Statements of Operations for the years ended December 31, 2021, 2020 and 2019	F-5
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2021, 2020 and 2019	F-6
Consolidated Statements of Cash Flows for the years ended December 31, 2021, 2020 and 2019	F-7
Notes to Consolidated Financial Statements	F-8

2. *Financial Statement Schedules*

All financial statement schedules have been omitted because they are not applicable, not required, or the information has been otherwise supplied in the consolidated financial statements or notes to consolidated financial statements.

3. *Index of Exhibits*

No. Exhibit

3. *Certificate of Incorporation and Bylaws.*

- 3.1 [Articles of Incorporation filed September 20, 2017 \(Incorporated by reference to Exhibit 3.1 of the Current Report on Form 8-K filed September 25, 2017\).](#)
- 3.2 [Articles of Merger between Biopix, Inc., and Riot Blockchain, Inc. \(Incorporated by reference to Exhibit 3.1 of the Current Report on Form 8-K filed October 4, 2017\).](#)
- 3.3 [Bylaws effective September 20, 2017 \(Incorporated by reference to Exhibit 3.2 of the Current Report on Form 8-K filed September 25, 2017\).](#)
- 3.4 [Amendment to Bylaws effective March 9, 2018 \(Incorporated by reference to Exhibit 3.1 of the Current Report on Form 8-K filed March 12, 2018\).](#)

4. *Instruments Defining the Rights of Security Holders, Including Indentures.*

- 4.1 [Certificate of Designations, Preferences and Rights of the 0% Series B Convertible Preferred Stock of the Company \(Incorporated by reference to Exhibit 3.1 of the Current Report on Form 8-K filed November 3, 2017\).](#)
- 4.2 [Amendment to Certificate of Designation of 0% Series B Convertible Preferred Stock of the Company \(Incorporated by reference to Exhibit 3.1 of the Current Report on Form 8-K filed December 21, 2017\).](#)
- 4.3 [2017 Equity Incentive Plan, as amended \(Incorporated by reference to Appendix E to the Definitive Proxy Statement on Schedule DEF14A filed July 10, 2017, as amended incorporated by reference to the Definitive Proxy Statement on Schedule DEF14A filed March 26, 2018 and Schedule DEFA 14A filed April 2, 2018\).](#)
- 4.4 [Riot Blockchain, Inc. 2019 Equity Incentive Plan \(Incorporated by reference to Appendix A to the Definitive Proxy Statement on Schedule DEF14A filed September 20, 2019\).](#)
- 4.5 [Amendment No. 1 to the Riot Blockchain, Inc. 2019 Equity Incentive Plan \(Incorporated by reference to Appendix A to the Definitive Proxy Statement on Schedule DEF 14A filed October 14, 2020\).](#)
- 4.6 [Amendment No. 2 to the Riot Blockchain, Inc. 2019 Equity Incentive Plan \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed October 22, 2021\).](#)
- 4.7 [Form of Time-Based Restricted Stock Unit Award Agreement under the Riot Blockchain, Inc. 2019 Equity Incentive Plan \(Incorporated by reference to Exhibit 4.7 of the Registration Statement on Form S-8 filed on November 15, 2021\).](#)
- 4.8 [Form of Performance-Based Restricted Stock Unit Award Agreement under the Riot Blockchain, Inc. 2019 Equity Incentive Plan \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed August 16, 2021\).](#)
- 4.9 [Form of Senior Secured Convertible Promissory Note dated as of January 28, 2019 \(Incorporated by reference to Exhibit 4.1 of the Current Report on Form 8-K filed February 1, 2019\).](#)
- 4.10 [Form of Common Stock Purchase Warrant Agreement dated as of January 28, 2019 \(Incorporated by reference to Exhibit 4.2 of the Current Report on Form 8-K filed February 1, 2019\).](#)
- 4.11 [Form of Registration Rights Agreement dated as of January 28, 2019 \(Incorporated by reference to Exhibit 10.03 of the Current Report on Form 8-K filed on February 1, 2019\).](#)
- 4.12 [Form of Escrow Deposit Agreement \(Incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed February 16, 2018\).](#)
- 4.13 [Shareholder Agreement dated as of May 26, 2021, by and between Riot Blockchain, Inc. and Northern Data AG \(Incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed May 26, 2021\).](#)

10. **Material Contracts.**

- 10.1 [Lease Agreement dated as of February 27, 2018 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed February 28, 2018\).](#)
- 10.2 [First Amendment to Lease Agreement, dated March 26, 2018 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed March 27, 2018\).](#)
- 10.3 [Second Amendment to Lease, dated November 29, 2018 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed December 6, 2018\).](#)
- 10.4 [Third Amendment to Lease, dated as of January 8, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed January 13, 2020\).](#)
- 10.5 [Fourth Amendment to Lease, dated effective as of April 10, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed April 20, 2020\).](#)
- 10.6 [Coinmint Co-Location Mining Services Agreement by and between Riot Blockchain, Inc. and Coinmint, LLC, dated effective as of April 8, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed April 14, 2020\).†](#)
- 10.7 [Jeffrey G. McGonegal Executive Employment Agreement dated as of February 6, 2019 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed February 11, 2019\).](#)
- 10.8 [Amended and Restated McGonegal Executive Employment Agreement by and between Riot Blockchain, Inc., and Jeffrey McGonegal, dated as of February 7, 2020 \(incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed February 11, 2020\).](#)
- 10.9 [First Amendment to the Amended and Restated McGonegal Employment Agreement by and between Riot Blockchain, Inc. and Jeffrey McGonegal, dated as of February 8, 2021 \(Incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed February 10, 2021\).](#)
- 10.10 [Second Amendment to the Amended and Restated McGonegal Employment Agreement by and between Riot Blockchain, Inc. and Jeffrey McGonegal, dated as of February 7, 2022 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K, filed February 8, 2022\).](#)
- 10.11 [Executive Employment Agreement by and between Riot Blockchain, Inc. and Jason Les, dated as of February 8, 2021 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed February 10, 2021\).](#)
- 10.12 [Executive Employment Agreement by and between Riot Blockchain, Inc. and Megan Brooks, dated as of April 6, 2021 \(Incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on April 7, 2021\).](#)
- 10.13 [Amendment No. 1 to the Executive Employment Agreement by and between Riot Blockchain, Inc. and Megan Brooks, dated as of November 5, 2021 \(Incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on November 8, 2021\).](#)
- 10.14 [Executive Employment Agreement by and between Riot Blockchain, Inc. and Soo il Benjamin Yi, dated as of May 24, 2021 \(Incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed May 24, 2021\).](#)
- 10.15 [Subscription Agreement by and between the Company and goNumerical, Ltd. \(Coinsquare\) dated as of September 29, 2017 \(Incorporated by reference to Exhibit 10.1 of the Quarterly Report on Form 10-Q for the quarter ended September 30, 2017 filed November 13, 2017\).](#)

- 10.16 [Asset Purchase Agreement by and between the Company and Prive Technologies, LLC dated as of February 15, 2018 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed February 16, 2018\).](#)
- 10.17 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc., dated as of December 2, 2019 \(Incorporated by reference to Exhibit 10.01 of the Current Report on Form 8-K filed on December 4, 2019\).](#)
- 10.18 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc. dated as of April 28, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed May 5, 2020\).†](#)
- 10.19 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc., dated as of May 6, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed May 12, 2020\).†](#)
- 10.20 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc., dated as of June 1, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed June 5, 2020\).†](#)
- 10.21 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc. dated as of August 12, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed August 18, 2020\).†](#)
- 10.22 [Amendment No. 1 to Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc. dated as of August 25, 2020 \(Incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed August 27, 2020\).†](#)
- 10.23 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc. dated as of August 24, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed August 27, 2020\).†](#)
- 10.24 [Sale and Purchase Agreement by and between Bitmaintech PTE, Ltd. and Riot Blockchain, Inc. dated as of September 30, 2020 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed October 7, 2020\).†](#)
- 10.25 [Sale and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of December 18, 2020, for the acquisition of 3,000 S19 Pro \(110 TH/s\) Miners \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed December 22, 2020\).†](#)
- 10.26 [Sale and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of December 18, 2020, for the acquisition of 12,000 S19j Pro \(100 TH/s\) Miners \(Incorporated by reference to Exhibit 10.2 of the Current Report on Form 8-K filed December 22, 2020\).†](#)

- 10.27 [Sale and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of March 11, 2021, for the acquisition of 1,500 S19j Pro \(90 TH/s\) Miners \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed March 17, 2021\).](#)†
- 10.28 [Future Sales and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of April 5, 2021 \(Incorporated by reference to Exhibit 10.1 of the Current Report on Form 8-K filed April 7, 2021\).](#)†
- 10.29 [Non-Fixed Price Sales and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of October 29, 2021 \(Incorporated by reference to Exhibit 10.1 to the Current Report filed on November 8, 2021\).](#)†
- 10.30 [Non-Fixed Price Sales and Purchase Agreement by and between Riot Blockchain, Inc. and Bitmain Technologies Limited, dated as of December 24, 2021 \(Incorporated by reference to Exhibit 10.1 to the Current Report filed on January 3, 2022\).](#)†
- 10.31 [Exclusive License Agreement between the Company and The Washington University, dated May 1, 2004, as amended \(Incorporated by reference to Exhibit 10.1 of the Quarterly Report on Form 10-Q for the quarter ended June 30, 2010, filed August 5, 2010\).](#)
- 10.32 [Form of Securities Purchase Agreement dated as of January 28, 2019 \(Incorporated by reference to Exhibit 10.01 of the Current Report on Form 8-K filed on February 1, 2019\).](#)
- 10.33 [Form of Security Agreement dated as of January 28, 2019 \(Incorporated by reference to Exhibit 10.02 of the Current Report on Form 8-K filed on February 1, 2019\).](#)
- 10.34 [At the Market Offering Agreement by and between Riot Blockchain, Inc. and H. C. Wainwright & Co., LLC, dated May 24, 2019 \(Incorporated by reference to Exhibit 1.01 of the Current Report on Form 8-K filed on May 24, 2019\).](#)
- 10.35 [First Amendment to the At The Market Offering Agreement, dated as of October 6, 2020, with H.C. Wainwright & Co., LLC \(Incorporated by reference to Exhibit 1.3 of the Registration Statement on Form S-3 filed on December 4, 2020\).](#)
- 10.36 [Second Amendment to the At The Market Offering Agreement, dated as of December 24, 2020, with H.C. Wainwright & Co., LLC \(Incorporated by reference to Exhibit 1.1 of the Registration Statement on Form S-3 filed on December 4, 2020\).](#)
- 10.37 [Sales Agreement, dated as of August 31, 2021, by and among Riot Blockchain, Inc., Cantor Fitzgerald & Co., B. Riley FBR, Inc., BTIG, LLC, Compass Point Research & Trading, LLC, and Roth Capital Partners, LLC \(Incorporated by reference to Exhibit 1.2 to the Form S-3ASR filed August 31, 2021\).](#)
- 10.38 [Stock Purchase Agreement dated as of April 8, 2021, by and among Riot Blockchain, Inc., Whinstone US, Inc., and Northern Data AG \(Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on April 9, 2021\).](#)
- 10.39 [Share Purchase Agreement, dated as of June 4, 2021, by and between Riot Blockchain, Inc. and Mogo, Inc. \(Incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed June 8, 2021\).](#)
- 10.40 [Membership Interest Purchase Agreement dated as of December 1, 2021 by and among Riot Blockchain, Inc., Electrode Acquisition Corp., and Steven R. Ferrie and David P. Franzmann \(Incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed December 1, 2021\).](#)

14. ***Code of Ethics***
- 14 [Code of Ethics and Business Conduct Adopted October 23, 2017 \(Incorporated by reference to Exhibit 14 of the Current Report on Form 8-K filed October 25, 2017\).](#)
21. **List of Subsidiaries of Riot Blockchain, Inc.***
23. ***Consent of Independent Registered Public Accounting Firm.***
- 23 [Consent of Marcum LLP*](#)
- 31 ***Certifications.***
- 31.1 [Rule 13a-14\(a\)/15d-14\(a\) - Certification of Chief Executive Officer \(principal executive officer\)*](#)
- 31.2 [Rule 13a-14\(a\)/15d-14\(a\) - Certification of Chief Financial Officer \(principal financial officer\)*](#)
- 32.1 [Section 1350 Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 \(Principal Executive Officer\)*](#)
- 32.2 [Section 1350 Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 \(Principal Financial Officer\)*](#)
- 101.INS Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document).*
- 101.SCH Inline XBRL Taxonomy Extension Schema Document.*
- 101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase Document.*
- 101.DEF Inline XBRL Taxonomy Extension Definition Linkbase Document.*
- 101.LAB Inline XBRL Taxonomy Extension Labels Linkbase Document.*
- 101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase Document.*

* Filed herewith.

† Portions of this exhibit have been omitted as confidential information.

ITEM 16. FORM 10-K SUMMARY.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf on March 16, 2022, by the undersigned thereunto duly authorized.

RIOT BLOCKCHAIN, INC.

/s/ Jason Les

Jason Les,
Chief Executive Officer

RIOT BLOCKCHAIN, INC.

/s/ Jeffrey G. McGonegal

Jeffrey G. McGonegal,
Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Jason Les and Jeffrey G. McGonegal, each and individually, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution, for them and in their name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, and generally to do all such things in their names and behalf in their capacities as officers and directors to enable the Company to comply with the provisions of the Securities Exchange Act of 1934 and all requirements of the Securities and Exchange Commission, granting unto each said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, ratifying and confirming all that said attorney-in-fact and agent, or their or his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant on March 16, 2022 in the capacities indicated.

/s/ Jason Les

Jason Les
Chief Executive Officer and Director (principal executive officer)

/s/ Jeffrey G. McGonegal

Jeffrey G. McGonegal
Chief Financial Officer (principal financial officer)

/s/ Benjamin Yi

Benjamin Yi, Director & Chairperson

/s/ Hannah Cho

Hannah Cho, Director

/s/ Lance D'Ambrosio

Lance D'Ambrosio, Director

/s/ Hubert Marleau

Hubert Marleau, Director

SUBSIDIARIES OF RIOT BLOCKCHAIN, INC.

The following is a list of subsidiaries of the registrant, Riot Blockchain, Inc., a Nevada corporation (Nasdaq: RIOT), omitting subsidiaries which, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary of the registrant as of December 31, 2021:

Name of Subsidiary	Place of Formation
Whinstone US, Inc.	Delaware
ESS Metron, LLC	Colorado

We also have additional operating and holding company subsidiaries that, if considered in the aggregate as a single subsidiary, do not constitute a significant subsidiary.

All of the above listed subsidiaries have been consolidated in our consolidated financial statements.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM'S CONSENT

We consent to the incorporation by reference in the Registration Statements of Riot Blockchain, Inc. on Form S-3 (File No. 333-259039 and File No. 333-259212) and Form S-8 (File No. 333-261086 and File No. 333-235355) of our report dated March 16, 2022, with respect to our audits of the consolidated financial statements of Riot Blockchain, Inc. and Subsidiaries as of December 31, 2021 and 2020 and for each of the three years in the period ended December 31, 2021 and our report dated March 16, 2022 with respect to our audit of internal control over financial reporting of Riot Blockchain, Inc. and Subsidiaries as of December 31, 2021, which reports are included in this Annual Report on Form 10-K of Riot Blockchain, Inc. for the year ended December 31, 2021.

Our report on the effectiveness of internal control over financial reporting expressed an adverse opinion because of the existence of material weaknesses.

/s/ Marcum LLP

Marcum LLP
Los Angeles, CA
March 16, 2022

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

I, Jason Les, certify that:

- 1) I have reviewed this annual report on Form 10-K of Riot Blockchain, Inc. for the year ended December 31, 2021;
- 2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
- 4) The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 5) The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

March 16, 2022

/s/ Jason Les

Jason Les,
Chief Executive Officer
PRINCIPAL EXECUTIVE OFFICER

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

I, Jeffrey G. McGonegal, certify that:

- 1) I have reviewed this annual report on Form 10-K of Riot Blockchain, Inc. for the year ended December 31, 2021;
- 6) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
- 7) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report.
- 8) The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
- 9) The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

March 16, 2022

/s/ Jeffrey G. McGonegal

Jeffrey G. McGonegal,
Chief Financial Officer
PRINCIPAL FINANCIAL OFFICER

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Riot Blockchain, Inc. (the "Company") on Form 10-K for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned Chief Executive Officer (principal executive officer) of the Company, Jason Les, hereby certifies, pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 16, 2022

/s/ Jason Les

Jason Les, Chief Executive Officer
PRINCIPAL EXECUTIVE OFFICER

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Riot Blockchain, Inc. (the "Company") on Form 10-K for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned Chief Financial Officer (principal financial officer) of the Company, Jeffrey G. McGonegal, hereby certifies, pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Report fully complies with the requirements of section 13(a) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 16, 2022

/s/ Jeffrey G. McGonegal

Jeffrey G. McGonegal, Chief Financial Officer
PRINCIPAL FINANCIAL OFFICER