

INDUSTRY REPORT

The Bitcoin Mining Industry: From High-Beta Exposure to Asset-Based Mispricing

SUMMARY

Bitcoin's role in the global asset allocation framework is undergoing a structural transition.

Following the post-election rally, Bitcoin has increasingly shifted away from sentiment-driven trading toward a more rational, asset-like trajectory. Volatility has compressed, leverage has declined, and price behavior is now more closely tied to allocation flows rather than speculative excess. Notably, Bitcoin's 30-day realized volatility has declined from roughly 65–70% in prior cycles to around 35–40% in the post-ETF regime, even as prices remain near cycle highs.

The 2024 halving reinforced cost discipline across the Bitcoin network rather than triggering immediate price dislocations. Instead of igniting another speculative cycle, the halving structurally raised the marginal cost of Bitcoin production. Electricity pricing, hardware depreciation, and capital intensity now impose a tangible economic floor on supply. Post-halving estimates indicate that efficient miners' marginal production costs are materially higher than pre-halving levels, while network hash rate growth has slowed meaningfully compared with earlier cycles.

Despite these structural shifts, equity markets continue to value Bitcoin miners using legacy high-beta frameworks. Mining equities are still largely treated as leveraged proxies for Bitcoin price movements, overlooking the growing divergence in balance-sheet strength, risk exposure, and downside protection across operators. This is reflected in the persistent reliance on hash-rate- and earnings-based benchmarks, even as miners' balance-sheet Bitcoin exposure has increased substantially.

This mismatch between fundamentals and valuation frameworks has created a systematic mispricing opportunity. As Bitcoin's volatility declines and production costs rise, certainty—not optionality—has become the scarce and undervalued attribute. Asset-backed miners currently trade at significant discounts to their implied Bitcoin-backed net asset value, despite lower forced-liquidation risk and stronger balance-sheet resilience.

Against this backdrop, Cango has identified AI inference as its second growth curve, positioning it as a strategic extension of its computing infrastructure rather than a purely speculative venture. Through deleveraging and resource reallocation, the company aims to build a flexible, distributed computing platform that supports enterprise AI workloads while strengthening financial flexibility. With the establishment of EcoHash and the launch of AI-focused operations under a dedicated technical team, early pilot projects have validated plug-and-play deployment in traditional mining environments and achieved operational break-even, laying the groundwork for scalable growth through standardized nodes and a unified software orchestration platform.

February 10, 2026

Gelonghui Research
Chujie (Jack) Sun, CFA
Senior Research Analyst
sunchujie@guruhk.com

Yuecong (Marco) Zhang
Senior Research Analyst
zhangyuecong@guruhk.com

Public Companies Mentioned in This Report

Cango Inc. (NYSE:CANG)
MARA Holdings, Inc. (NASDAQ:MARA)
Strategy (NASDAQ:MSTR)
CleanSpark, Inc. (NASDAQ:CLSK)
Core Scientific, Inc. (NasdaqGS:CORZ)
Riot Platforms, Inc. (NASDAQ:RIOT)
IREN LIMITED ORD (NASDAQ:IREN)
TeraWulf (NASDAQ:WULF)
Cipher Mining (NASDAQ:CIFR)

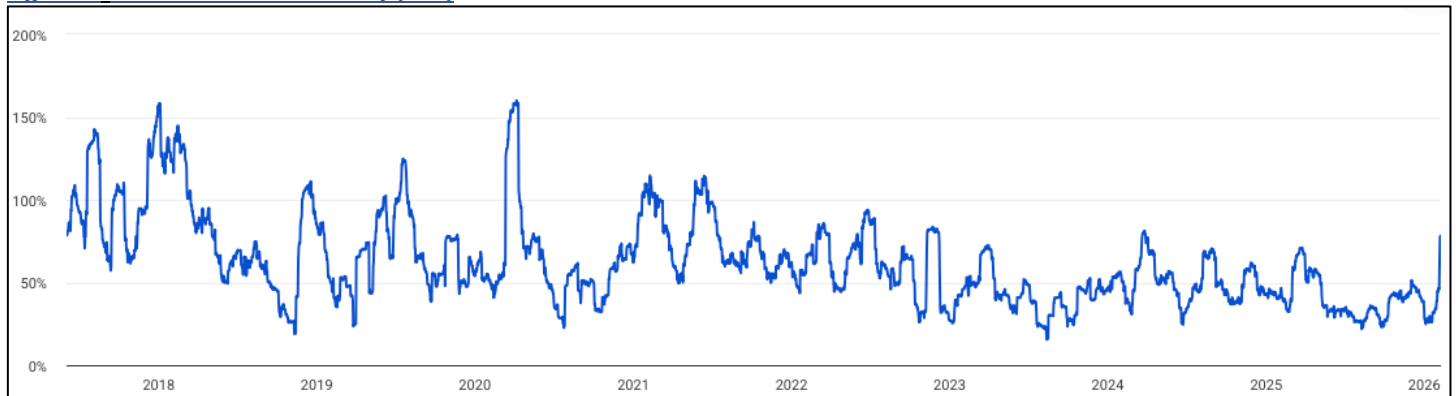
Chapter I — Bitcoin’s Structural Transition: From Trading Instrument to Allocable Asset

Bitcoin has entered a more mature price regime, with realized volatility trending lower even as prices showed resilience.

Recent data indicate that Bitcoin’s realized volatility has compressed compared with historical cycles, reflecting diminished reliance on reflexive trading dynamics and more allocation-oriented participation. For instance, as of early 2026, Bitcoin’s short-term realized volatility (7-day) was around 43.5%, within a “normal” range after earlier elevated swings, suggesting that price movement patterns have stabilized relative to past cycles.

At the same time, Bitcoin prices continue to exhibit strategic support. Although the market saw significant drawdowns—such as a drop below ~\$67,000 in early February 2026, nearly half below the October 2025 peak—recovery rallies (e.g., more than 11% intraday gains) demonstrate persistent demand dynamics rather than sustained breakdowns.

Figure 1: Bitcoin Realized Volatility (30d)



Source: GLH Research; theblock.co.

Bitcoin’s 30-day realized volatility have trended lower since late 2023, reflecting reduced speculative beta and a transition toward a more stable price regime.

Institutional adoption via regulated spot Bitcoin ETFs has grown substantially and contributes to this structural shift.

Spot Bitcoin ETFs have expanded dramatically since launch. According to aggregated ETF tracking, total Bitcoin ETF assets under management (AUM) exceeded \$160 billion by late 2025, up from roughly \$20 billion in early 2024, illustrating rapid institutional and allocative demand despite price pullbacks.

ETF flows have not been uniformly positive, and intermittently experienced net outflows during risk-off periods, but the overall scale and persistence of AUM growth signal that allocators are embedding Bitcoin within regulated portfolio structures rather than purely speculation-driven trading mechanisms.

Figure 2: Spike in Bitcoin Spot ETF AUM



Source: GLH Research; Coinglass.

Spot Bitcoin ETF assets under management expanded from under ~\$20 b to over ~\$160 b, reflecting substantial institutional allocation interest.

The market appears to be transitioning from reflexive speculative pricing to asset allocation pricing.

Academic and institutional research suggests that Bitcoin’s correlation with traditional equity indices has increased post-ETF, while its correlation with gold has stabilized near zero, reinforcing Bitcoin’s evolving identity as a distinct allocable asset rather than a pure hedge or speculative instrument.

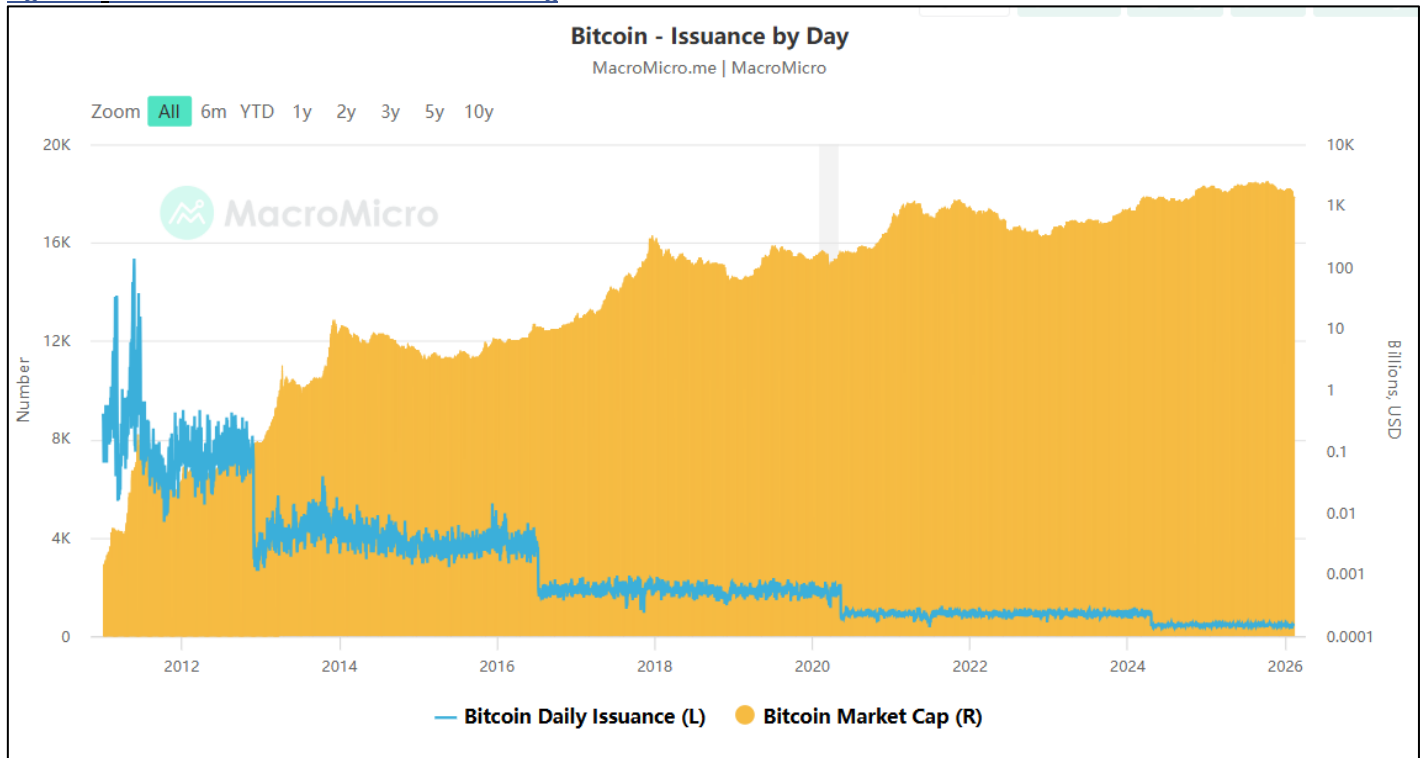
This shift is not yet fully reflected in short-term price behaviour, but the underlying structural signals—volatility compression, sustained ETF accumulation, and evolving correlations with mainstream financial assets—point toward a deepening role for Bitcoin within diversified portfolios.

Chapter II — Halving Revisited: Cost Discipline and the Emergence of a Price Floor

The 2024 halving event did not produce immediate price surges, but it materially altered supply economics by structurally tightening future issuance.

Post-halving issuance rates have fallen sharply, reducing Bitcoin’s inflationary pressure and increasing the relative scarcity of new supply versus demand. While earlier cycles saw halving accompanied by pronounced price momentum, the recent halving’s impact has manifested more in supply constraints and network economics than in short-term speculative appreciation, consistent with institutionalized price formation.

Figure 3: Bitcoin Issuance Rate Pre vs Post Halving



Source: GLH Research; Company filings.

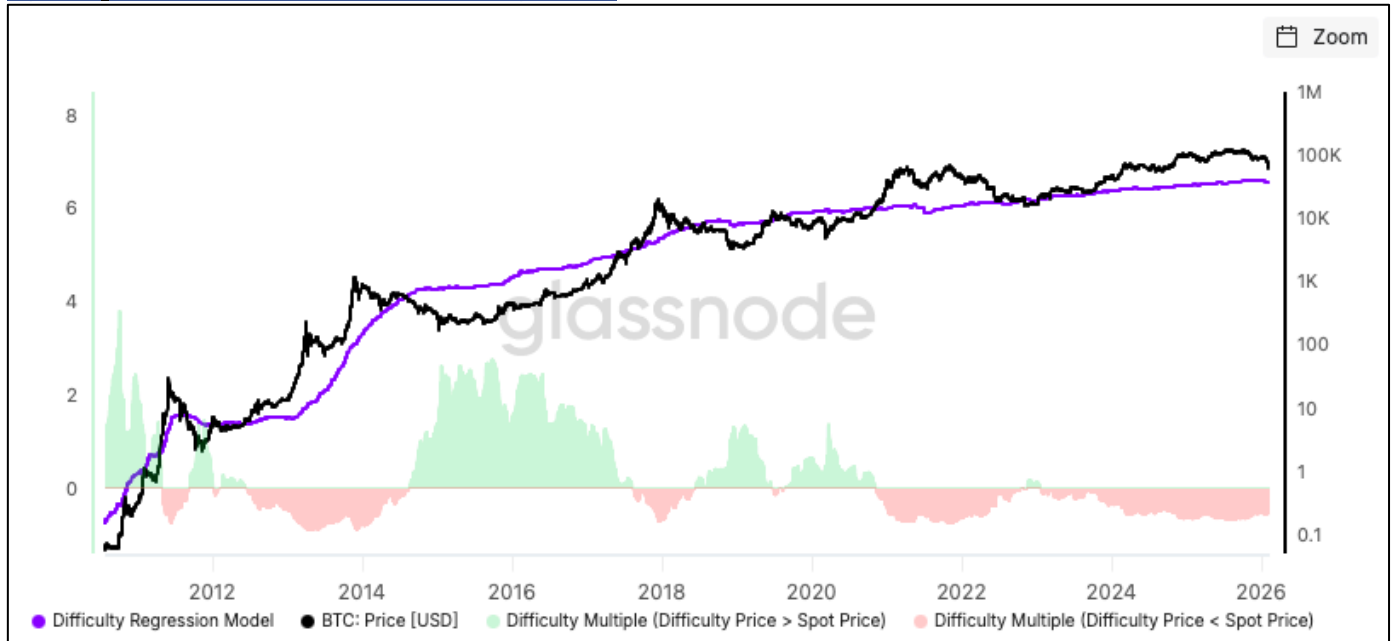
The Bitcoin issuance rate dropped under 1% post-2024 halving, reinforcing structural scarcity and tightening supply economics.

Production cost dynamics are reinforcing a structural floor for Bitcoin pricing.

Marginal supply economics—driven by energy costs, hardware depreciation, and capital intensity—play a larger role in determining miner behaviour than in prior eras. Although precise marginal cost estimates fluctuate by region and technology, industry cost-floor analytics commonly show that marginal production costs for efficient operations have risen relative to pre-halving levels, contributing to a lower bound in price discovery and reducing the range of economically viable selling pressure below cost.

As these cost thresholds rise, marginal supply elasticity declines, meaning fewer miners can sustain operations below equilibrium economics. This structural change supports a price floor that is less dependent on momentum and more tied to fundamental production viability.

Figure 4: Bitcoin Production Cost Estimate vs Spot Price



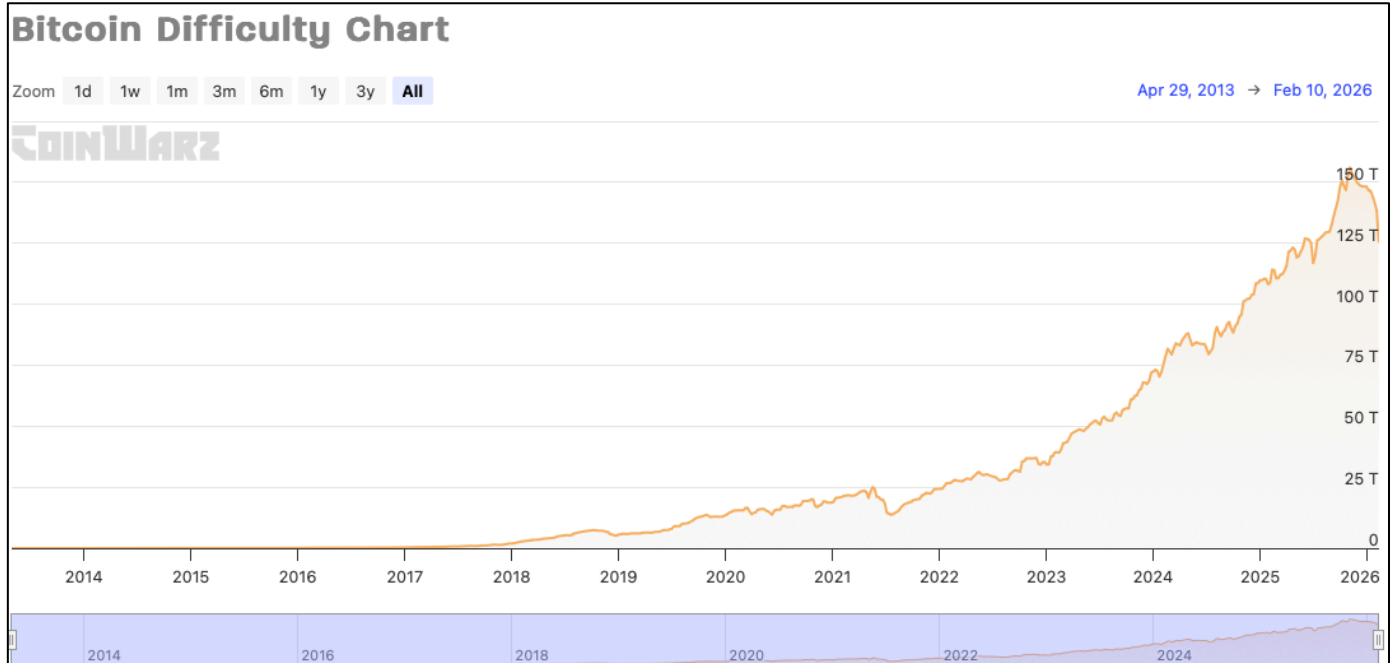
Source: GLH Research; Glassnode.

Estimated marginal production cost serves as a structural floor for pricing, as continued operation below cost is unsustainable.

Capital intensity has reshaped the mining landscape, moving it beyond simple operational leverage.

Today's mining environment requires significant upfront capital for efficient power contracts, modern ASIC fleets, and infrastructure investments, penalizing small-scale and high-cost operators. As a result, the cost curve has pulled supply out of the lowest-efficiency brackets, concentrating production among better-capitalized and more sustainable entities. This trend further stabilizes supply and anchors price outcomes through cost discipline rather than pure sentiment.

Figure 5: Difficulty Growth



Source: GLH Research; Coinwarz.

Post-halving hash rate and difficulty growth decelerated, reflecting trimmed production elasticity and higher cost barriers for new entrants.

Despite these structural shifts, equity markets have not fully internalized the implications of cost-anchored pricing.

Many miners are still priced primarily based on legacy high-beta assumptions tied to Bitcoin’s short-term price moves, rather than on sustainably anchored economics or balance-sheet discipline. This gap between market pricing frameworks and underlying realities is the source of valuation dispersion highlighted in this report.

Chapter III — The Illusion of Homogeneity: Why Bitcoin Miners Are No Longer the Same Asset

Equity markets continue to value Bitcoin miners as if they were a single, homogeneous asset class.

Despite structural changes in Bitcoin’s volatility profile and institutional adoption, mining equities are still widely treated as leveraged proxies for Bitcoin price movements, with little regard to balance-sheet nuance. This valuation simplification masks material differences in risk exposure and future cash-flow dynamics.

Bitcoin Treasury Data Shows Wide Dispersion in BTC Holding Profiles

Publicly traded Bitcoin miners hold very different levels of Bitcoin on their balance sheets — an important structural differentiator that is frequently ignored in legacy valuation frameworks.

According to the latest publicly available Bitcoin treasury data:

- Marathon Digital (MARA) holds approximately 53,250 BTC, representing a significant treasury position relative to its mining operations.
- Riot Platforms (RIOT) holds roughly 18,005 BTC on its balance sheet, underscoring a more moderate accumulation strategy.
- CleanSpark (CLSK) holds about 13,513 BTC, evidencing a smaller BTC accumulation but still material relative to its market cap.
- Cango (CANG) holds around 3,023 BTC, placing it among the publicly reported miners with meaningful BTC balance-sheet exposure.

These holdings sit alongside a global backdrop where the total BTC held by public companies exceeds ~1.1 million BTC, underscoring that miners are just one piece of a broader corporate Bitcoin landscape.

Figure 6: Bitcoin Miner Treasury Holdings by Company

Top 100 Public Bitcoin Treasury Companies			BITCOINTREASURIES.NET			BITCOINTREASURIES.NET			BITCOINTREASURIES.NET		
Rank	Company	Bitcoin [mNAV]	Rank	Company	Bitcoin [mNAV]	Rank	Company	Bitcoin [mNAV]	Rank	Company	Bitcoin [mNAV]
1	Strategy	714,644 [0.99]	35	DDC Enterprise Limited	1,888 [0.57]	69	Prenetics	502 [8.00]			
2	MARA Holdings, Inc.	53,250 [1.03]	36	Bitfarms Ltd.	1,827 [9.88]	70	3U Holding AG	427			
3	Twenty One Capital	43,514 [0.73]	37	BITFUFU	1,780 [3.61]	71	Neptune Digital Assets	416			
4	Metaplanet Inc.	35,102 [1.37]	38	Canaan Inc.	1,750 [27.12]	72	Virtu Financial, Inc.	410			
5	Bitcoin Standard Treasury...	30,021 [0.13]	39	NEXON Co., Ltd.	1,717	73	DMG Blockchain Solutio...	403			
6	Bullish	24,300 [2.42]	40	Exodus Movement, Inc	1,704 [3.09]	74	LM Funding America	356 [0.07]			
7	Riot Platforms, Inc.	18,005 [5.02]	41	Fold Holdings Inc.	1,526 [0.68]	75	Net Holding A.S.	352			
8	Coinbase Global, Inc.	14,548 [45.35]	42	Bitdeer Technologies Group	1,508 [28.50]	76	Consensus Mining & Sei...	340 [2.82]			
9	Hut 8 Mining Corp	13,696 [6.96]	43	Cipher Mining	1,500 [59.91]	77	Angel Studios, Inc.	303 [27.48]			
10	CleanSpark, Inc.	13,513 [3.44]	44	Anap Holdings Inc.	1,417 [0.70]	78	POP Culture Group Co., ...	300			
11	Strive	13,132 [0.71]	45	Remixpoint	1,411 [2.36]	79	S-Science	296			
12	Trump Media & Technolog...	11,542 [3.33]	46	Treasury	1,111	80	The9 Limited	285			
13	Tesla, Inc.	11,509	47	H100 Group	1,051	81	Bitplanet	265			
14	Block, Inc.	8,780 [57.00]	48	ZOOZ Power	1,036 [0.07]	82	LQWD Technologies Corp.	253 [16.61]			
15	GD Culture Group	7,500 [0.44]	49	KULR Technology Group	1,021 [1.68]	83	Coinshares Internation...	236			
16	Galaxy Digital Holdings Ltd	6,894 [17.24]	50	Nano Labs	1,000 [0.73]	84	WEMADE	223			
17	American Bitcoin Corp	5,843 [2.83]	51	USBC, Inc.	1,000 [0.05]	85	Rumble Inc.	211			
18	Next Technology Holding ...	5,833 [0.02]	52	Ming Shing Group	833 [0.15]	86	Parataxis Korea	200 [3.93]			
19	Nakamoto Inc	5,398 [0.40]	53	Yueda Digital Holdings	819 [0.40]	87	BitMine	192			
20	ProCap Financial	5,000	54	SOS Limited	803 [27.13]	88	Bitcoin Treasury Capital	187			
21	GameStop Corp.	4,710 [40.48]	55	Bitcoin Treasury Corp	769 [0.72]	89	Vanadi Coffee, SA	183			
22	Boyya Interactive Interna...	4,091 [1.01]	56	Figma Inc	767 [94.73]	90	Coinsilium	182			
23	Empyr Digital	4,081 [0.54]	57	Convano Inc	6574 763	91	Genius Group	180			
24	Gemini Space Station Inc	4,002 [3.33]	58	Aker ASA	754	92	Matador Technologies I...	175 [0.93]			
25	OranjeBTC	3,722 [0.77]	59	CIMG Inc	730 [0.16]	93	The Brooker Group	165			
26	Cango Inc	3,645 [0.62]	60	Satsuma Technology	620	94	B HDL	161			
27	Bitcoin Group SE	3,605 [0.67]	61	Méliuz	605	95	FRMO Corp.	159 [27.96]			
28	Capital B	2,828 [1.44]	62	Hyperscale Data	576	96	Sixty-Six Capital Inc	149			
29	The Smarter Web Compa...	2,674	63	MercadoLibre, Inc.	570	97	K33 AB	141 [3.01]			
30	DeFi Technologies	2,452 [1.71]	64	bitmax	377030 551	98	BTCS S.A.	138			
31	Microcloud Hologram	2,353 [0.19]	65	Alliance Resource Partners, ...	541 [81.66]	99	Vaultz Capital	135			
32	Sequans Communications...	2,264 [0.59]	66	Samara Asset Group	540	100	Horizon Kinetics Holdin...	132			
33	HIVE Digital Technologies	2,201 [3.56]	67	Phoenix Group PLC	514						
34	Core Scientific	2,116 [39.89]	68	DigitalX	502						
								Total of top 100	1,130,330		
								Total of all public companies	1,133,070		

Source: GLH Research; Bitcointreasuries.net.

Bitcoin mining companies exhibit a wide dispersion in BTC holdings, highlighting structural differences in balance-sheet exposure that cannot be captured by a single valuation benchmark.

This range of BTC exposures implies very different risk buffers across companies.

Where MARA's treasury may cover a sizable portion of its nominal enterprise value, other miners with smaller holdings face higher sensitivity to price volatility and forced liquidation risk. Yet, in practice, most of these equities are priced using the same subset of metrics — hash rate multiples, near-term earnings, or marginal production forecasts.

Reclassifying Bitcoin Miners by Risk Structure

To evaluate miners correctly, it is essential to distinguish among three distinct economic archetypes:

1. Operating-Leverage Miners

These companies generate value primarily through production efficiency:

- They benefit most when BTC prices rise sharply.
- Their equity returns are highly correlated with short-term price volatility.
- Their valuation typically reflects operating leverage rather than long-term asset quality.

Example peers in this category often emphasize scale and low unit costs over BTC accumulation per se.

2. Balance-Sheet Beta Maximizers

These miners seek to amplify exposure via leverage and accumulation strategies:

- They accumulate BTC through mining and open market purchases, often funded through capital markets.
- Their balance sheets are more volatile due to reliance on leverage or equity issuance.
- They perform well in up markets but risk dilution or forced selling in downturns.

Riot Platforms is illustrative — it holds ~18,005 BTC yet historically sells a large portion of its production, maintaining beta exposure rather than long-term asset concentration.

3. Asset-Backed Balance-Sheet Miners

These entities prioritize BTC accumulation and balance-sheet resilience:

- BTC holdings form the primary value driver of the equity, not operating EPS.
- Downside risk is mitigated by asset coverage.
- Valuation should therefore lean toward NAV-type frameworks rather than pure production multiples.

CleanSpark, MARA, and Cango inhabit a hybrid zone between operating leverage and asset backing, but their BTC holdings anchor part of their intrinsic value in a way that pure operating firms do not.

Benchmark Mismatch and Systematic Mispricing

The market's persistence in applying a one-size-fits-all valuation model has generated systematic mispricing.

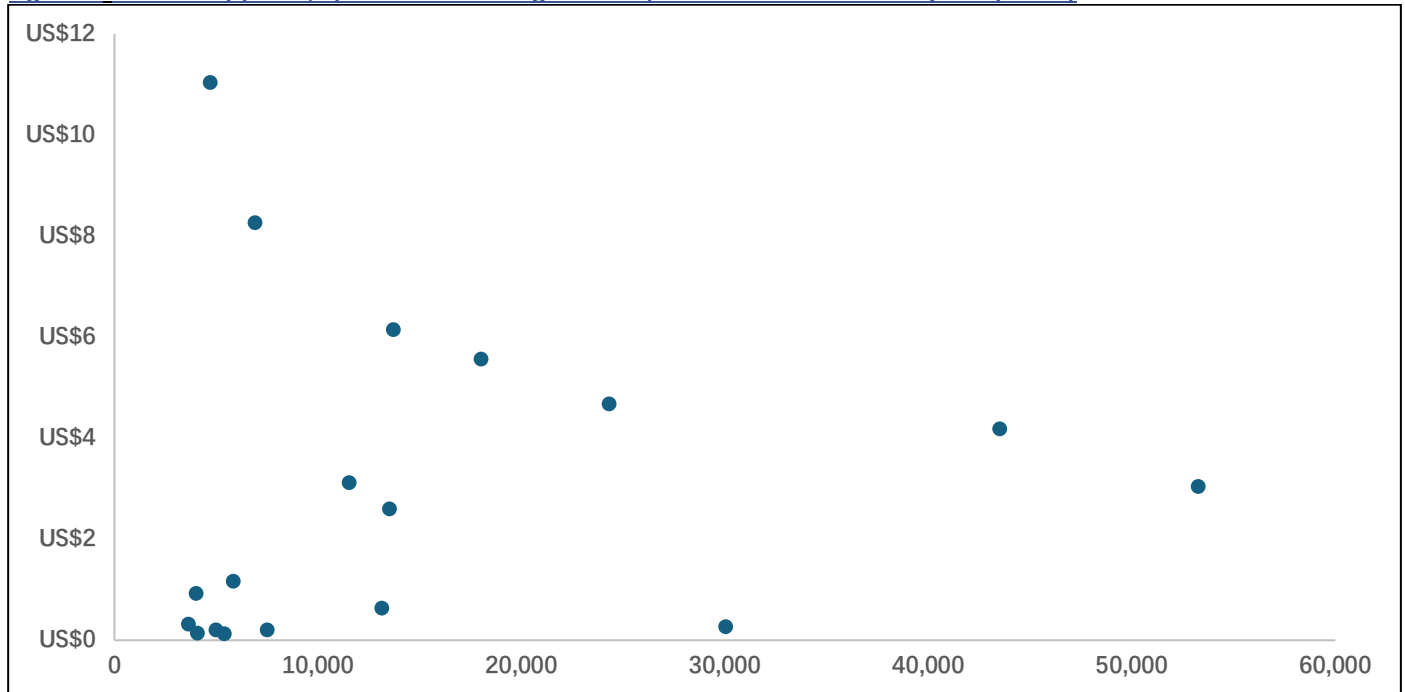
Equities with materially different business models and risk exposures are often benchmarked against the same criteria — mainly hash rate growth and near-term mining profitability — which disproportionately favors high beta narratives and undervalues balance-sheet strength.

Consider the range of BTC holdings as a share of market cap:

- MARA's significant BTC stockpile (tens of thousands of BTC) often has more implicit value than its current equity valuation suggests.
- Cango, holding several thousand BTC, is treated comparably to miners with minimal BTC balance sheets, despite its stronger asset backing.

This illustrates the core pricing error: Markets continue to price miners as if their equity value is driven solely by operating leverage, rather than differentiating those with substantial BTC asset coverage.

Figure 7: Market Cap(in US\$B) vs Bitcoin Holdings Scatter (Miners & Bitcoin Treasury Companies)



Source: GLH Research; Company filings.

Scatter visualization of public companies' Bitcoin holdings versus market capitalization reveals that balance-sheet BTC exposure is not proportionally priced by equity markets, reflecting material mispricing opportunities.

Why This Matters Now

As Bitcoin's volatility remains relatively suppressed compared with prior cycles, the dominance of optionality in valuation is fading. Risk–return profiles are increasingly driven by balance-sheet asset coverage rather than speculative beta. Under these conditions, companies with sizable Bitcoin treasuries should command higher relative valuations than those evaluated purely on production metrics.

This divergence lays the groundwork for relative valuation convergence — not necessarily absolute price appreciation, but valuation expansion for asset-backed miners as markets adjust frameworks.

Empirical Evidence of Mining Sector Dynamics

While hash rate growth remains an important network metric, production and balance-sheet data reinforce structural divergence among miners:

- In mid-2025, three major public miners (MARA, CLSK, RIOT) collectively increased realized hash rate by ~15.5%, contributing to rising network difficulty and highlighting operational scaling trends.
- Despite production growth, equity performance remains dislocated from realized balance-sheet value, especially at lower Bitcoin prices, illustrating valuation friction between asset-backed and operating-leverage peers.

Conclusion: Disaggregation Is No Longer Optional

The Bitcoin mining sector can no longer be valued as a monolithic high-beta proxy for Bitcoin prices.

Structural differences in BTC holdings, operational strategy, and balance-sheet resilience drive materially different risk profiles. The continued use of legacy benchmarks obscures these differences and perpetuates mispricing.

As markets adjust to a lower volatility, cost-anchored Bitcoin regime, balance-sheet metrics — particularly BTC coverage — must become central to valuation. Miners with stronger asset coverage are poised for relative repricing as legacy frameworks fade.

Publicly traded Bitcoin miners are increasingly reframing adjacent businesses such as AI/HPC and power management, not primarily as standalone growth narratives, but as strategic responses to the evolving economics of mining.

Market narratives often emphasize the “optional upside” of AI or diversified compute revenue streams. In practice, companies across the mining spectrum are integrating these capabilities to mitigate balance-sheet risk, stabilize cash flows, and reduce reliance on short-term Bitcoin sales — especially during drawdowns in price or hash price regimes.

AI and HPC: Reducing Operating Volatility, Not Creating Unbounded Growth

AI and high-performance computing (HPC) initiatives within the mining sector have grown from fringe experimentation to material strategic priorities for leading operators.

A hybrid business model, where excess power and infrastructure capacity are repurposed for AI workloads, is emerging as a common strategy. This approach allows companies to monetize megawatts that would otherwise be under-utilized during Bitcoin price stress periods and generate predictable contracted revenue streams.

Several publicly traded miners are actively integrating AI workloads:

- Iren (formerly Iris Energy) has reported rapid growth in AI cloud services, with AI-related revenue rising from approximately \$2.7 million to \$17.3 million year-over-year in a recent quarter, even as total mining revenue increased concurrently — illustrating the incremental cash-flow contribution from AI workloads.
- Iren expanded its GPU fleet to 10,900 Nvidia GPUs, including high-end H100 and H200 models, positioning it to serve enterprise AI compute demand alongside mining operations.

In parallel, other miners are securing large AI and HPC hosting deals:

- TeraWulf’s Nasdaq-listed unit signed multi-billion-dollar AI hosting agreements backed by Google, with long-term contracted revenues that may reach \$8.7 billion under extensions, and plans to deploy over 200 MW of power capacity at its facilities, demonstrating the scale of energy commitments tied to data-center and AI hosting.

This pattern reflects risk-control, not pure speculation.

While miners like Iren and TeraWulf advertise strong AI optionality, the primary economic rationale is the ability to retain assets (Bitcoin) and cash through diversified workload revenue when hash prices dip — effectively functioning as a buffer against volatility and forced selling. The revenue from AI and HPC contracts can underwrite operating cash needs when mining margins are compressed.

Figure 8: AI/HPC Contracting Momentum in Bitcoin Mining



Source: GLH Research.

Major Bitcoin miners have secured multi-billion-dollar AI/HPC contracts, with deals such as TeraWulf’s ~\$3.7B 10-year Fluidstack agreement and Hut 8’s ~\$7B 15-year AI data center lease, demonstrating industry pivot beyond pure mining.

Power Strategy: Stability, Scale, and Cross-Sector Flexibility

Control over electricity costs and power infrastructure has always been core to mining economics — but its role is increasingly strategic rather than purely cost-based.

Miners operate in an environment where electricity can constitute up to 60–80% of variable operating cost, and fixed power contracts or self-generation arrangements can substantially lower breakeven mining costs compared with spot energy exposure.

Beyond cost control, advanced power strategies enable:

- Long-term price certainty via fixed or hedge-backed energy contracts;
- Flexible deployment of energy capacity to adjacent compute workloads such as HPC;
- Enhanced negotiating leverage with local utilities and governments for capacity expansion.

In some cases, mining companies control significant energy portfolios that can be redeployed:

- Industry estimates suggest that miners collectively control ~6 GW of power access, with some operators securing pipelines up to 12 GW, demonstrating the scale of energy allocation that could be used for computing workloads beyond Bitcoin mining.

This energy capacity is a strategic asset. Rather than solely chasing marginal BTC reward increases, miners increasingly view power infrastructure as a foundation for diversified, contract-backed revenue, especially when paired with AI or data-center services.

Figure 9: AI/HPC Capacity Deployment Across Major Miners

Company	AI/HPC Capacity (MW)	Notes
Hut 8 (River Bend)	~245 MW	15-year AI/HPC data center lease with Fluidstack backed by Google
Cipher Mining (Barber Lake)	~168 MW → up to ~300 MW	10-year HPC colocation agreement; expanded to lease full 300 MW site
TeraWulf (Development sites)	~480 MW connected + ~500 MW after refurbishment	New sites in Kentucky & Maryland with AI/HPC positioning
Bitfarm (AI pivot)	~341 MW energized	Existing capacity repurposed for AI infrastructure plans

Source: GLH Research; Company filings.

Bitcoin miners' HPC deployment is materializing across multiple companies, with TeraWulf's over 510 MW of critical HPC load, Cipher's expanding 500 MW capacity, and Hut 8's 245 MW site, reflecting a broader trend toward repurposing mining infrastructure for high-performance workloads.

The Transition Is Part of a Broader Risk Management Imperative

The persistence of high electricity costs and volatile hash prices pressures miners to optimize every controllable variable.

Even in environments where Bitcoin price rises, mining profitability can be eroded by rising hash price and increasing competition. For example, the hash price — a measure of revenue per unit of hash rate — has at times touched record lows relative to network difficulty, leaving many miners with operating expenses higher than hash-based revenue.

Under these conditions, adjacent revenue streams — such as AI compute hosting and secured power agreements — are not luxury growth options, but operational hedges that smooth cash flow and reduce balance-sheet stress.

Company Actions Underscore Strategic Diversification

Several miners are publicly pursuing these hybrid strategies:

- Iren increased its AI cloud footprint while scaling mining capacity, signaling integrated revenue strategies rather than isolated experiments.
- TeraWulf's AI hosting deals illustrate how long-term contracts with major cloud partners can fundamentally alter a mining firm's revenue mix, anchoring it in contracted compute capacity.

Additionally, industry commentary points to broader structural shifts such as estimates that up to 20% of Bitcoin miner power capacity might shift to AI/HPC workloads by 2027, reinforcing the strategic calculus for diversified compute revenue.

Implications for Valuation and Risk Assessment

When adjacent business strategies are properly understood, they are risk management tools rather than speculative growth drivers.

This distinction matters for valuation:

- If AI/HPC revenue is treated solely as optional growth, investors overprice speculative potential;
- If instead AI/HPC is recognized as cash-flow stabilization and downside protection, valuation frameworks should reflect risk-adjusted certainty rather than volatility-driven optionality.

In other words: AI and power strategies function as structural hedges that improve balance sheet durability, reduce forced selling risk, and therefore increase the intrinsic value of asset-backed miners.

This interpretation fundamentally alters how equity should be valued — prioritizing stable earnings plus asset coverage over short-term production multiples.

Conclusion: They Are Not Growth Stories — They Are Risk Controls

Public narratives emphasizing AI as a growth “rocket booster” miss the deeper function these strategies perform in the current mining regime. In an era of tighter cost structures, greater volatility discipline, and elevated capital intensity, adjacent businesses serve to:

- Mitigate cash-flow volatility;
- Reduce reliance on Bitcoin sales;
- Anchor downside risk through predictable revenue streams;
- Strengthen balance sheets by diversifying load on power infrastructure.

As miners adapt to a lower-volatility Bitcoin environment, the strategic value of adjacent revenue lines is realized primarily through their risk-management contributions — not through speculative optionality.

Chapter V — Why Now: Repricing Catalysts and the Inevitable Shift in Valuation Frameworks

Market mispricings rarely correct themselves without structural catalysts, and in the Bitcoin ecosystem those catalysts are already at work. Three interlocking forces — volatility regime change, institutional adoption via regulated vehicles, and realignment of capital flows — are converging to shift how Bitcoin and its production sector are valued.

Volatility Compression Redefines Risk Premia

Bitcoin’s volatility has trended downward over multiple years, fundamentally altering how risk is priced.

Institutional research shows that Bitcoin’s multi-year volatility has declined gradually from its peaks in earlier cycles, even as trading patterns evolve, making the asset more assessable as a strategic allocation rather than a purely speculative instrument. This trend is consistent with increased institutional interest and ETF liquidity tightening price swings.

Lower realized volatility weakens the case for treating miners as high-beta equities. When volatility dominates, optionality drives valuations; in lower-vol environments, balance-sheet certainty becomes more valuable.

ETF Adoption Is a Structural Signal, Not a Short-Term Trend

Spot Bitcoin ETFs are accumulating significant capital and remain a key anchor for allocative demand.

Although recent months have seen net flows fluctuate, the cumulative scale of institutional accumulation continues to influence market structure by providing regulated channels for large capital exposure to Bitcoin. ETF vehicles are reducing the dominance of leveraged retail flows and increasing the share of capital engaged in strategic allocation.

Importantly, outflows in ETFs during risk-off periods reflect positioning shifts, not structural abandonment. Long-term institutional demand for regulated exposure supports the thesis that Bitcoin is evolving toward an asset allocation class rather than remaining purely speculative.

Mainstream Investor Actions Reinforce the Narrative Shift

Large institutional holders are already adjusting their frameworks for cryptocurrency exposure.

For instance, MicroStrategy, one of the largest corporate Bitcoin holders, reported substantial widening losses in late 2025 as Bitcoin prices fell, with over 713,000 BTC on its balance sheet even as the digital asset market faced headwinds. The company's loss widened from ~\$670 million in 2024 to \$12.4 billion in 2025, highlighting the asymmetric equity exposure miners and holders face when valuation models are leveraged.

This dramatic result underscores that balance-sheet asset coverage matters as much as — if not more than — short-term price direction, particularly when volatility compresses.

Relative Valuation Pressures Are Building Now

Valuation frameworks that worked in high-volatility cycles are losing explanatory power.

As markets adjust to more rubber-measured price behavior, legacy metrics such as hashrate multiples or episodic earnings have become less effective at forecasting long-term value. Instead, valuation drivers increasingly resemble those used in traditional asset classes: balance-sheet strength, downside risk control, and consistent cash flows.

This trend is reflected (and reinforced) by analyst coverage shifts. For example, a major investment bank recently initiated coverage on select miners based on AI/data center integration and energy infrastructure advantages, while downgrading others lacking such optionality or diversification.

The Macro Backdrop Supports Structural Repricing

Bitcoin mining trends in 2026 indicate deeper integration with macroeconomic and regulatory shifts.

Industry outlooks suggest that in 2026, broader macro forces, including potential monetary easing and regulatory clarity, will shape capital flows into scarce assets. Analysts highlight that Bitcoin's institutional adoption and its predictable issuance schedule are critical factors in its transition from speculative instrument to portfolio building block.

In this context, miners must be evaluated not as homogeneous levered proxies, but as differentiated exposures whose valuations depend on balance-sheet resilience and adaptability to evolving macro conditions.

Repricing Will Be Relative Before Absolute

The initial phase of repricing is likely to occur within the mining sector itself, rather than requiring a large spot price move.

Companies with large Bitcoin holdings, strong balance sheets, predictable revenue streams (e.g., AI/HPC diversification), and secured power contracts stand to benefit disproportionately as risk frameworks adjust.

Once investors recognise that miners with meaningful asset coverage are systematically undervalued under legacy frameworks, capital flows will begin to differentiate winners from losers.

Conclusion: Markets Are Being Forced to Reevaluate

The shift away from high-beta valuation toward balance-sheet-driven pricing is not theoretical — it is already unfolding.

Volatility suppression, continued institutional accumulation, and macroeconomic realignment are forcing valuation frameworks to evolve:

- Traditional metrics tied to cyclical exposure are losing explanatory power.
- Asset coverage and downside protection are becoming scarce and valuable.
- Repricing pressures are building around differentiated business models.

This is not a transient narrative; it is the next phase of maturation for both Bitcoin and the mining ecosystem.

As legacy valuation assumptions fade, companies anchored in asset stability — not just operational leverage — will be early beneficiaries of a market forced to see them differently.

Core takeaway: The catalysts for repricing are structural and ongoing — they do not require a near-term Bitcoin price surge to play out. Investors should focus on balance-sheet distinctions now, because markets are already beginning to price them differently.

Figure 10: Catalyst Timeline (2026–2028)

Timeframe	Catalyst Event	Implication for Bitcoin Mining / Valuation
Early 2026	Morgan Stanley initiates coverage on AI/HPC-focused miners	Institutional recognition that mining assets are being re-priced with AI infrastructure optionality.
2026 Q1–Q3	Broader industry pivot toward compute infrastructure	Multiple miners reposition to AI/HPC to mitigate mining margin compression and diversify revenue.
2026 H2	Bitfarm announces full pivot to AI data centers by 2027	A mining firm plans complete transition, showing strategic reorientation of business models under pressure.
2027	Hashprice and efficiency regime shifts	As competition and energy costs intensify, miners with diversified compute assets gain relative valuation premiums.
2028 Q1 (Projected)	Bitcoin network reward halving (~March 2028)	Structural supply cut strengthens scarcity dynamics; pricing may shift from sentiment to issuance-driven valuation.
2028 Medium Term	AI/HPC capacity repurposing matures	With AI data centers operational, miners with scalable compute infrastructure begin to attract differentiated valuation multiples.

Source: GLH Research; Company filings.

A forward catalyst timeline summarizing key events likely to accelerate valuation framework changes in the Bitcoin mining sector from 2026 through 2028.

Appendix: Key Industry Players

1. Cango Inc. (CANG)

Adopting AI distributed computing power network Strategy, and Establishing EcoHash in the U.S.

Cango has clearly identified “AI inference” as its second growth curve. The company will focus on the AI inference market, building a highly flexible computing power grid platform by empowering small and medium-sized mining farms worldwide. Through deleveraging and resource replacement, it aims to provide ample support for corporate AI computing infrastructure and technology R&D, further unleashing enterprise vitality. The company will repay its operating loans to strengthen its balance sheet, and reduce financial leverage. It will fuel the company and provide financial flexibility during the AI computing window period.

Cango has established EcoHash and its new CTO, Jack Jin, comes from the infrastructure team at Zoom. In Dallas, Cango has set up a wholly-owned subsidiary, EcoHash Technology LLC, specifically to advance AI computing operations. Mr. Jin will lead the team to leverage his deep expertise in managing large-scale GPU clusters and elastic computing, driving the development of the technology foundation.

The demo pilot is moving toward scaling. The “AI computing integration box” and “plug-and-play” solutions have been feasibly verified through initial demo projects, enabling rapid deployment of AI edge computing nodes in traditional mining environments without large-scale infrastructure renovations. The business model reached the break-even point, showing promising future profitability. The next steps include creating a “model house” node and initiating the development of a software orchestration platform to unify distributed computing resources in preparation for the next stage of scaling.

Operational Footprint and Asset Backing

Throughout 2025, Cango steadily scaled its Bitcoin operations, expanding deployed hash rate to ~50 EH/s and producing several hundred BTC per month. As of late 2025, the company reported 7,528+ BTC on its balance sheet, underscoring a clear asset-backed foundation that provides downside support and aligns with our asset coverage valuation framework.

Valuation Implication

Despite visible growth in operational scale and balance-sheet BTC accumulation, Cango’s equity continues to trade below implied asset value. This discount illustrates the broader thematic in this report: markets have yet to fully internalize balance-sheet strength and structural transformation into modern, risk-adjusted valuation frameworks.

2. MARA Holdings, Inc. (MARA)

Industry Positioning and Scale

MARA Holdings (formerly Marathon Digital Holdings) is one of the largest publicly traded Bitcoin miners globally, renowned for both its expansive mining infrastructure and proactive asset accumulation strategies. By mid-2025, MARA was reported as the second-largest corporate Bitcoin holder with over 50,000 BTC on its balance sheet, positioning it as a flagbearer of treasury-centric mining strategies.

Strategic Diversification and HODL Stance

MARA has pursued:

- Geographic diversification of mining facilities across multiple U.S. states and continents, mitigating regional regulatory and power cost risks.
- A long-term “HODL” Bitcoin strategy, retaining mined BTC to capture upside in price appreciation rather than selling into operating expenses.
- Capital markets initiatives such as convertible note offerings to fund strategic purchases and strengthen balance-sheet BTC coverage.

This HODL commitment, combined with a diversified facility network, aligns MARA with the asset-backed valuation segment of the mining industry.

Operational Differentiators

MARA has also invested in cooling and operational technologies, including proprietary immersion-cooling systems, which can materially improve mining efficiency and cost per hash relative to peers.

Valuation Implication

MARA exemplifies the balance-sheet beta maximizer archetype — companies whose valuation should reflect not just operational output but also strategic BTC accumulation and durable asset coverage.

3. CleanSpark Inc. (CLSK)

Core Business and Infrastructure Build-Out

CleanSpark is a vertically integrated Bitcoin mining company with significant self-operated power and data center infrastructure across multiple U.S. jurisdictions. As of late 2025, CleanSpark operated >800 MW of utilized power capacity with total contracted capacity exceeding 1.45 GW, reflecting a materially larger energy base than many peers.

The company reported robust operational metrics for 2025, including ~7,746 BTC produced for the calendar year and ~13,099 BTC in treasury holdings by year-end, reinforcing its dual focus on production stability and balance-sheet strength.

Strategic Expansion into AI and HPC

CleanSpark is actively repositioning itself at the intersection of Bitcoin mining and AI/high-performance computing (HPC) infrastructure. The company has:

- Expanded into AI data center development, hiring senior leadership dedicated to this segment.
- Entered key markets like Texas for large-scale energy and compute deployments.
- Structured significant capital raises (e.g., \$1.15 b zero-coupon convertible notes) to underwrite energy and compute expansion.

This evolution mirrors the broader industry trend of leveraging energy infrastructure for diversified revenue streams beyond pure mining.

Valuation Implication

CleanSpark sits within a hybrid valuation bucket: its core Bitcoin production anchors the business, while progressive expansion into compute infrastructure offers optional (yet increasingly strategic) risk-mitigating cash flows under structural revaluation narratives.

4. Riot Platforms, Inc. (RIOT)

Positioning and Business Model

Riot Platforms is a major publicly traded miner historically positioned as an operating-leverage play on Bitcoin price. RIOT has emphasized capital markets activity alongside production, at times monetizing mined BTC to fund operations and capex rather than strictly HODL'ing. (General industry knowledge)

Balance-Sheet Posture

While Riot has maintained meaningful BTC holdings, its strategic orientation has been more trading-and-operationally driven compared with asset-backed accumulation peers. This impacts valuation — the company tends to trade more as a short-term proxy for Bitcoin price movement rather than a balance-sheet asset.

Valuation Implication

RIOT exemplifies the operating-leverage archetype, where equity exposure is heavily beta-driven by Bitcoin price and mining production margins, and less by balance-sheet BTC coverage.

ABOUT THE ANALYSTS

Chujie (Jack) Sun, CFA

Senior Research Analyst

Chujie (Jack) Sun is a Senior Research Analyst at Gelonghui Research. Since 2017, Jack has served as the Investment Analyst in China Alpha Fund Management (Hong Kong) Limited, TMT Analyst in First Shanghai Group, and TMT Analyst at Gelonghui Research. Focusing on TMT sector, Chinese companies listed in the US, Hong Kong, and etc., and he specializes in both buy-side and sell-side equity research. Jack holds a B.A. in Economics from Ohio State University (Columbus) and an M.S. in Finance from City University of Hong Kong.

Yuecong (Marco) Zhang

Senior Research Analyst

Yuecong (Marco) Zhang is a Senior Research Analyst at Gelonghui Research. Marco previously held the position of Senior Research Analyst at Watertower Research, Executive Director at Valuable Capital Group's Investment Banking Department, Vice President at Guosen Securities (HK), and Senior Associate at Roth Capital Partners, where he completed more than 35 transactions, including IPOs, follow-on offerings, and M&A, with a total transaction value of more than US\$3.5 Billion+ for mid-cap companies from China and the US. During his time at Roth, he led six NASDAQ and NYSE IPOs for Chinese clients, with a total transaction value of more than US\$260 Million. Marco holds a B.S. in Financial Management from North China Electric Power University and an M.S. in Applied Finance from Pepperdine University.

DISCLOSURES

Gelonghui Research ("GLH") is a professional publisher of investment research reports on public companies and, to a lesser extent, private firms ("the Companies"). GLH provides investor-focused content and digital distribution strategies designed to help companies communicate with investors.

GLH is not a FINRA registered broker/dealer or investment adviser and does not provide investment banking services. This report is not disseminated in connection with any distribution of securities and is not an offer to sell or the solicitation of an offer to buy any security. GLH operates as an exempt investment adviser under the so called "publishers' exemption" from the definition of investment adviser under Section 202(a)(11) of the Investment Advisers Act of 1940. GLH does not provide investment ratings/recommendations or price targets on the companies it reports on. Readers are advised that the research reports are published and provided solely for informational purposes and should not be construed as an offer to sell or the solicitation of an offer to buy securities or the rendering of investment advice. The information provided in this report should not be construed in any manner whatsoever as personalized advice. All users and readers of GLH's reports are cautioned to consult their own independent financial, tax and legal advisors prior to purchasing or selling securities.

Statements included in this report may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, goals, assumptions or future events or performance are not statements of historical fact and may be "forward looking statements". Such statements are based on expectations, estimates and projections at the time the statements are made and involve many risks and uncertainties such as competitive factors, technological development, market demand and the company's ability to obtain new contracts and accurately estimate net revenues due to variability in size, scope and duration of projects, and internal issues, which could cause actual results or events to differ materially from those presently anticipated.

The analyst who is principally responsible for the content of this report has represented that neither he/she nor members of his/her household have personal or business-related relationships to the subject company other than providing digital content and any ancillary services that GLH may offer. Unless otherwise indicated, GLH intends to provide continuing coverage of the covered companies. GLH will notify its readers through website postings or other appropriate means if GLH determines to terminate coverage of any of the companies covered.

GLH is being compensated for its research by the company which is the subject of this report. GLH may receive up to US\$200,000 in total within a year for research and potentially other services from a given client and is required to have at least a 1-year commitment. None of the earned fees are contingent on, and GLH's client agreements are not cancellable for the content of its reports. GLH does not accept any compensation in the form of warrants or stock options or other equity instruments that could increase in value based on positive coverage in its reports. GLH or an affiliate may seek to receive compensation for non-research services to covered companies, such as charges for presenting at sponsored investor conferences, distributing press releases, advising on investor relations and broader corporate communications and public relations strategies as well as performing certain other related services ("Ancillary Services"). The companies that GLH covers in our research are not required to purchase or use Ancillary Services that GLH or an affiliate might offer to clients.

The manner of GLH's potential research compensation and Ancillary Services to covered companies raise actual and perceived conflicts of interest. GLH is committed to manage those conflicts to protect its reputation and the objectivity of employees/analysts by adhering to strictly-written compliance guidelines. The views and analyses included in our research reports are based on current public information that we consider to be reliable, but no representation or warranty, expressed or implied, is made as to their accuracy, completeness, timeliness, or correctness. Neither we nor our analysts, directors, officers, employees, representatives, independent contractors, agents or affiliate shall be liable for any omissions, errors or inaccuracies, regardless of cause, foreseeability or the lack of timeliness of, or any delay or interruptions in the transmission of our reports to content users. This lack of liability extends to direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, losses, lost income, lost profit or opportunity costs. All investment information contained herein should be independently verified by the reader or user of this report. For additional information, all readers of this report are encouraged to visit GLH's website <https://www.gelonghui.com>.