gomining
Institutional

BITCOIN MINING MARKET REVIEW AND KEY TRENDS

Authored by:

Nico Smid — Research Analyst, GoMining Institutional
Fakhul Miah — Managing Director, GoMining Institutional

Executive Summary

The first half of 2025 represented a watershed for Bitcoin mining, as the sector emerged simultaneously as a national store-of-value and a cornerstone of institutional portfolios. In March, the U.S. Treasury's creation of a non-spendable 198,000 BTC reserve placed Bitcoin on par with gold in sovereign asset allocation, while spot Bitcoin ETFs surpassed $100 billion in assets under management and $1 trillion in trading volume by mid-year. These milestones cemented Bitcoin's mainstream standing and validated its role as both a liquid investment vehicle and a strategic reserve asset.

Yet this powerful institutional tailwind was met by equally unprecedented headwinds. In April, the U.S. imposed tariffs on Southeast Asian-manufactured ASICs, delaying deployments until an 18-month carve-out for critical energy infrastructure took effect. Simultaneously, surging electricity prices driven by the AI boom and heightened competition for grid capacity compressed margins across legacy mining hubs. These pressures, however, accelerated operational innovation: homegrown pioneers such as Auradine and the SEALMINER series delivered next-generation efficiency gains, and operators retired or repurposed legacy rigs in favor of bespoke, high-yield deployment strategies.

On the network level, hash rate climbed to all-time highs even as transaction fees fell below 1 percent of block rewards during Q2, reigniting debate over long-term fee-market sustainability versus block-subsidy reliance. Meanwhile, inventive post-halving financing structures and the expansion of BTC-backed credit facilities demonstrated that mining has transitioned from a niche pursuit to a sophisticated discipline, underpinned by advanced capital markets and risk-management techniques.

Looking ahead to H2 2025, investors should monitor the EU's MiCA Phase II roll-out for evolving stablecoin and exchange regulations, track power-price spreads in both legacy and emerging markets (notably Latin America and Africa), and assess major miners' deployment schedules for next-generation ASICs to gauge future hash rate growth and margin trajectories. This Review delivers the strategic insights and data-driven analysis necessary for institutional allocators to navigate the shifting landscape of Bitcoin mining and to capitalize on the sector's resilient, high-return infrastructure opportunities.

About the Authors and GoMining Institutional

Nico Smid — Research Analyst, GoMining Institutional

Nico Smid, founder of Digital Mining Solutions, brings over 15 years of international business experience to the Bitcoin mining industry. Since entering the digital asset space in 2017, he has evolved from a private investor to an active miner and strategic advisor, building expertise across the full mining value chain.

Recognized as a trusted advisor and skilled industry connector, Nico has helped numerous companies launch, scale, and optimize Bitcoin mining operations across diverse geographies. Through Digital Mining Solutions, he has delivered a comprehensive suite of services—including market intelligence, strategic advisory, investor readiness, and deal facilitation—empowering clients to make informed decisions, attract institutional capital, and stay competitive.

Nico brings this experience to his role as Research Analyst at GoMining Institutional, where he focuses on delivering high-quality insights, industry analysis, and data-driven research for investors and stakeholders seeking exposure to the Bitcoin mining sector.

Fakhul Miah — Managing Director, GoMining Institutional

Fakhul leads the institutional business at GoMining, where he is responsible for delivering structured Bitcoin mining products tailored to institutional investors, family offices, and high-net-worth individuals. He brings over 20 years of experience across traditional finance and blockchain innovation, with a focus on risk, infrastructure, and compliant product development.

Previously, Fakhul served as Global Head of Margin Financing and Risk Operations at Morgan Stanley, where he led a global 50-person team overseeing risk exposure, margin lending, and collateral operations for Prime Brokerage and Wealth Management clients. He managed cross-border teams across the U.S., Europe, and Asia, and played a key role in delivering large-scale regulatory, risk, and product initiatives, including the rollout of CME Bitcoin Futures in 2017.

He has since held executive roles at Web3 pioneers including CreDA and Elastos, building solutions at the intersection of decentralized identity, DeFi, and DAO governance. At GoMining, his focus is on bridging institutional capital with Bitcoin mining infrastructure through professionally managed, regulatory-aligned offerings.

gomining Institutional

Contents

gomining Institutional

From Tariffs to Treasuries: Macro, Regulatory, and Political Developments.

The first half of 2025 was a defining period in Bitcoin's journey toward institutional and geopolitical relevance. It marked the point where Bitcoin evolved not just as a financial asset, but as a strategic economic instrument entangled in the spheres of global trade policy, energy infrastructure, and national reserves. Three major forces drove the headlines: deepening regulatory clarity, aggressive trade policy shifts, and an assertive political embrace of Bitcoin by prominent U.S. stakeholders.

Regulatory Clarity Reaches Critical Mass

The maturation of the Bitcoin market accelerated thanks to landmark regulatory moves in both the U.S. and Europe.

In the European Union, MiCA—the Markets in Crypto-Assets regulation—came into effect on January 1, 2025. This comprehensive framework harmonized rules for exchanges, custodians, and stablecoin issuers. It created passporting rights for licensed firms, enabling them to offer digital asset services across the EU. As a result, U.S. and Asian players began opening or expanding European operations, with Coinbase, Circle, and BitGo among those leveraging their regulatory approvals to capture market share. The upshot: MiCA turned Europe into a jurisdiction of clarity, attracting both capital and talent, while reducing operational uncertainty for institutional allocators.

The biggest victim of the MiCA regulation was USDT, which failed to meet the new compliance standards required for stablecoin issuers in the European Union. Without proper licensing, transparency, or an EU legal entity, Tether was effectively sidelined from regulated exchanges and institutional platforms. As a result, USDT lost market share in Europe to MiCA-compliant alternatives like USDC and EUROe.

Across the Atlantic, the U.S. Securities and Exchange Commission continued to refine its oversight of Bitcoin spot ETFs, which had exploded in volume and assets under management since their approval in early 2024. By June 2025, cumulative trading volume for spot Bitcoin ETFs had surpassed $1 trillion, and total assets under management broke the $100 billion mark. The SEC issued additional guidance in Q1 on ETF risk disclosures, underlying custody arrangements, and market surveillance mechanisms. These moves did not deter flows, they empowered them. Institutional allocators now saw ETFs not just as a vehicle for

exposure, but as a safe, regulator-approved onramp.

Also in Q1, the U.S. Department of the Treasury intensified its scrutiny of privacy-preserving tools and crypto mixers, flagging them as vectors for illicit finance. While this development unnerved some segments of the crypto industry, Bitcoin largely sidestepped the fallout. Its transparent ledger, maturing KYC infrastructure, and growing role in regulated markets helped position it as a “clean” digital asset, one that even nation-states start to embrace.

U.S. Treasury Establishes Strategic Bitcoin Reserve

In March 2025, the United States took a landmark step toward formally recognizing Bitcoin as a national reserve asset through an executive order signed by President Donald Trump. The creation of the Strategic Bitcoin Reserve signals a paradigm shift: Bitcoin is no longer merely an alternative investment but part of the country’s long-term economic security framework.

The Strategic Bitcoin Reserve was established to position the U.S. as a leader in digital asset management on the global stage, akin to how it manages gold and other strategic commodities. Crucially, the reserve is funded primarily through Bitcoin seized via criminal and civil forfeiture proceedings. This means the government is building its digital asset treasury without taxpayer expenditure, leveraging assets already in its possession.

Approximately 198,000 BTC currently held by the U.S. Treasury is allocated to the reserve. This substantial stockpile underpins the government’s digital asset strategy. After the U.S., China and the United Kingdom are the biggest holders of Bitcoin.

1	Auto US United States		฿198,012	$20,895M
2	CN China		฿190,000	$20,050M
3	Auto GB United Kingdom		฿61,245	$6,463M
4	UA Ukraine (holdings of public officials)…		฿46,351	$4,891M
5	KP North Korea		฿13,562	$1,431M
6	Auto BT Bhutan		฿12,062	$1,273M
7	Auto SV El Salvador		฿6,217	$656M

Top 7 Bitcoin Holdings by Nation States (Source: Bitcointreasuries.net).

The executive order explicitly prohibits the sale or liquidation of the Bitcoin within the reserve. Instead, it will be held as a long-term store of value, emphasizing a commitment to Bitcoin's role as a strategic economic asset rather than a short-term revenue source. Alongside Bitcoin, a broader U.S. Digital Asset Stockpile has been created to manage other cryptocurrencies confiscated by authorities, ensuring a centralized approach to government-held digital assets.

The announcement sparked enthusiasm among market participants, validating Bitcoin's growing legitimacy in sovereign financial policy. Bitcoin's price reacted positively, rallying to near $90,000 in the weeks following the executive order. Institutional investors and mining companies viewed the move as a clear signal that Bitcoin is now intertwined with U.S. fiscal and strategic interests. This development not only bolstered confidence but also set a precedent for other nations considering sovereign digital asset reserves.

Miners Caught in the Tariff Crossfire

Despite the policy tailwinds, U.S. Bitcoin miners were not spared from the broader geopolitical chessboard. In April 2025, the Trump administration announced sweeping new tariffs on a range of goods from Southeast Asia. Countries like Thailand, Malaysia, and Indonesia joined China in facing elevated levies. While framed as a strategic decoupling move, the new tariffs caught the Bitcoin mining sector off guard.

Over the last five years, many hardware manufacturers, most notably Bitmain, had shifted ASIC production from mainland China to Southeast Asia to avoid earlier tariffs. This time, there was no safe haven. Because U.S. trade law taxes goods based on country of origin rather than point of shipment, the new tariffs covered nearly all relevant mining equipment.

The implications were immediate: miners faced projected increases in capital expenditure. The pain extended beyond ASICs. Tariffs applied to cooling systems, modular data centers, PDUs, and networking hardware components essential to scaling operations. Projects that were slated to break ground in Q2 were suddenly paused, pending cost reassessments and sourcing alternatives.

Miners did catch a break. In response to strong lobbying from energy and infrastructure coalitions, the administration carved out temporary tariff exemptions for hardware deemed critical to domestic energy optimization and digital infrastructure. This included immersion cooling, and edge data center equipment —categories that encompass many Bitcoin mining deployments.

The exemption, set to last 18 months, gave miners the breathing room they needed.

The structural consequences of the new tariff regime are already reshaping the global Bitcoin mining supply chain. In an effort to sidestep U.S. import tariffs, China's dominant ASIC manufacturers—Bitmain, Canaan, and MicroBT, which collectively produce over 90% of the world's mining rigs—have begun establishing U.S. production or assembly facilities. These shifts aim to shield operations from tariffs.

Meanwhile, the American firm Auradine—backed by mining giant MARA Holdings — is seizing the opportunity. Auradine's domestic production of Teraflux miners has drawn major orders from both MARA and Genesis Digital Assets (GDA). In June GDA deployed 1,000 air-cooled units at its Texas facility. MARA disclosed that approximately half of its 2025 hardware orders were placed with Auradine and advanced over $22 million for future deliveries in Q1 alone. These moves reflect a broader strategic pivot toward U.S.-made mining infrastructure, even as tariffs continue to raise near-term costs for firms still sourcing from China. The geography of Bitcoin's hardware supply starting to be rewritten, not just by trade policy, but by a growing desire for resilient, domestic alternatives in an increasingly politicized mining landscape.

The Trump Brothers and the Rise of American Bitcoin

If the tariff drama underscored Bitcoin's exposure to trade policy, a different story captured its political mainstreaming: the Trump family's direct investment in mining.

In Q2, Hut 8 Corp., a major North American mining firm, restructured its U.S. operations under a new entity: American Bitcoin Corp. Initially established as American Data Centers, the company underwent rebranding after a major equity stake was acquired by Eric Trump and Donald Trump Jr. Hut 8 contributed the majority of its ASIC inventory to the new venture, receiving a controlling stake in return. All existing and future mining under Hut 8's U.S. compute division is now operated by American Bitcoin, with Hut 8 continuing as the exclusive infrastructure partner.

This wasn't a branding stunt. The stated goal of American Bitcoin is bold: to become the largest and most efficient Bitcoin miner in the world while building up a private strategic reserve of Bitcoin. It's a direct parallel to the U.S. government's own Treasury initiative.

The market interpreted this move as a strong political endorsement. Mining, once painted as environmentally irresponsible and politically toxic, now had the explicit backing of the Trump family. For U.S. based miners, it was validation. For foreign investors, it was a green light.

A Historic Footnote on the Blockchain

H1 2025 wasn't just defined by policy shifts and geopolitical tensions, it also delivered a uniquely symbolic moment that captured the cultural convergence of politics and the Bitcoin protocol. In an homage, Bitcoin mining firm MARA inscribed a portrait of President Donald J. Trump into Bitcoin block 879613, just days ahead of his second-term inauguration. The block, which processed 7,396 transactions, now serves a permanent tribute on the most censorship-resistant ledger on earth. Trump became the first sitting U.S. president to be permanently inscribed on the Bitcoin blockchain, a symbolic milestone that affirmed Bitcoin's enduring role in the political and financial establishment.

Trump's inscription on the Bitcoin Blockchain (Source: Mempool.space).

gomining Institutional

Sentiment Roller Coaster

After a strong finish to 2024—driven by post-election bullish sentiment and Bitcoin crossing the $100,000 mark for the first time—the market stumbled into 2025. Bitcoin posted its worst Q1 performance since 2019, ending the quarter down 12.5%, and more than 25% off its all-time high set on January 20th.

The correction in H1 2025 was sharp enough to shake market confidence, but not deep enough to break the broader macro uptrend. The Fear and Greed Index, a popular gauge of investor sentiment, started the year in "greed" territory (hovering around ₮5/100), before plunging into "extreme fear", hitting a low of 20 —the lowest level recorded in the first half. By the end of June, sentiment had stabilized at more neutral levels, reflecting a market no longer panicked.

Moving from greed to fear and back (Source: Bitcoin Magazine Pro).

gomining Institutional

Bitcoin Price Highs and Lows

On January 20th, Bitcoin reached its first all-time high of the year, peaking just below $110,000. However, this bullish momentum quickly reversed. Mounting geopolitical tensions and renewed concerns over U.S. trade policies triggered a sharp sell-off, pushing BTC down to its yearly low just above $74,000 — a steep 31.2% decline, or nearly $35,000, in just two and a half months.

The market found relief when former President Trump signalled a softening of U.S. tariffs, which helped restore investor sentiment. Bitcoin rebounded above $83,000 and extended its gains following favourable U.S. CPI data, which further boosted confidence.

By mid-April, BTC had stabilized above $85,000. On April 22nd, it surged $6,000 to surpass $93,000 amid growing optimism over U.S.-China trade relations. Trump's comment that tariffs on Chinese goods would "come down substantially" from 145% reassured investors and added fuel to the rally.

On May 8th, Bitcoin broke back above the $100,000 mark for the first time since February. The move followed hints of a new trade agreement between the U.S. and the U.K., which Trump later confirmed with the release of a broad outline. BTC climbed steadily throughout the day.

On May 22nd, Bitcoin reached a new all-time high of nearly $112,000. While the price tested the $100,000 level twice in June, it remained resilient. The second test came on June 22nd, after news broke of a surprise U.S. strike on Iranian nuclear facilities. Despite the geopolitical shock, the pullback was modest. Panic sellers briefly pushed the price below six figures, but by Monday morning, BTC had reclaimed $100,000 and held above that level through the end of June.

Bitcoin opened 2025 at $93,400 and ended the first six months of the year at $107,400, posting a remarkable $14,000 or 15% year-to-date increase.

From ATH to yearly low and back to ATH (Source: TradingView)

gomining Institutional

The $2 Trillion Milestone

H1 2025 was exceptional for Bitcoin, both in terms of price volatility and market milestones. Early 2025, BTC surpassed the symbolic $100,000 threshold, pushing its total market capitalization above $2 trillion—a historic achievement just 16 years after its creation. For perspective, Amazon took 29 years to reach a $2 trillion valuation, while Apple took 42 years, hitting the mark in 2020. After a surge in price in Q2, Bitcoin climbed to the 5th position globally, overtaking corporate giants like Google and Amazon. Bitcoin ended H1 2025 at the sixth position with a market cap exceeding $2.1 trillion.

Rank	Asset Name	Ticker	Market Cap	Price
1	Gold	GOLD	$22.324 T	$3,324
2	NVIDIA	NVDA	$3.970 T	$162.82
3	Microsoft	$3.733 T	$3.264 T	$502.37
4	Apple	AAPL	$3.139 T	$210.20
5	Amazon	AMZN	$2.360 T	$222.39
6	Bitcoin	BTC	$2.194 T	$105,692
7	Alphabet (Google)	GOOG	$2.151 T	$177.72
8	Silver	SILVER	$2.062 T	$36.64
9	Saudi Aramco	2222.SR	$1.692 T	$7.00
10	Meta Platforms (Facebook)	META	$1.591 T	$633.06

Bitcoin surpassing silver's market cap (Source: Companymarketcap.com).

gomining
Institutional

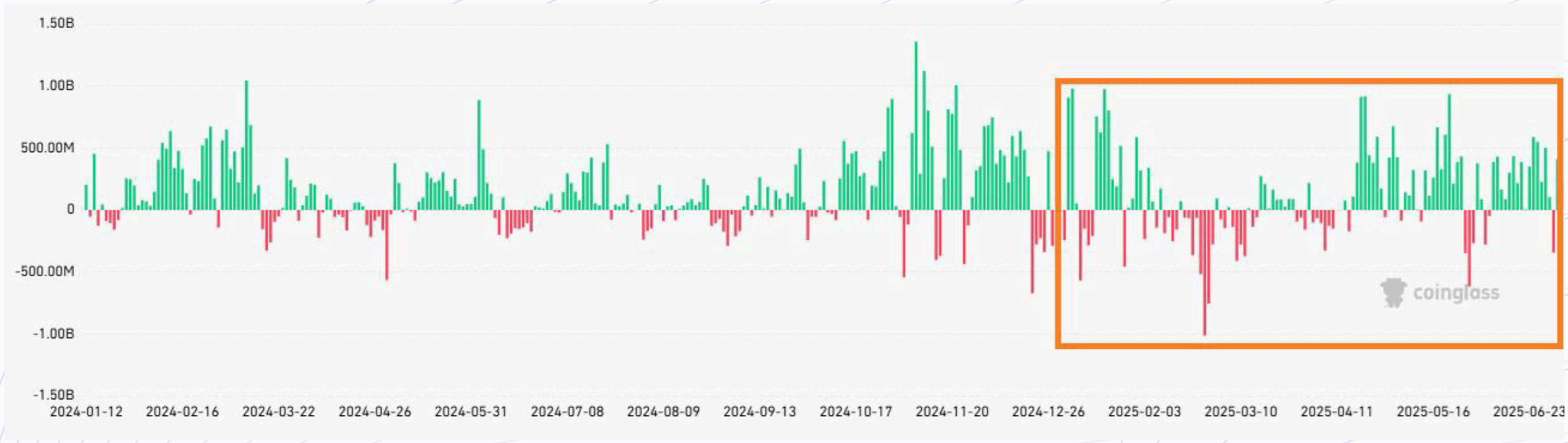
Rising Demand from Institutional Buyers

A major catalyst behind Bitcoin's strength in H1 2025 has been the unprecedented surge in spot Bitcoin ETF inflows. Renewed institutional interest has created a deep and consistent demand floor, with U.S.-listed spot ETFs holding over $135 billion in assets under management (AUM) by the end of H1. The AUM peak reached $134.97 billion in May, coinciding with Bitcoin's all-time high near $112,000.

Bitcoin Spot ETF Assets Under Management hits record highs in May 2025 (Source: Coinglass).

On June 11, U.S. spot Bitcoin ETFs surpassed $1 trillion in cumulative trading volume, just under 18 months after their debut in January 2024. While this figure simply reflects total trading activity over time, it marks a significant milestone in the mainstream adoption of Bitcoin through traditional financial products. It puts Bitcoin ETFs in the same league as some of the world's most actively traded and established funds, such as the Vanguard S&P 500 ETF (VOO) and the Invesco QQQ Trust (QQQ), which tracks the Nasdaq-100 Index. This growth highlights both institutional interest in Bitcoin exposure and the growing investor confidence in regulated digital asset products.

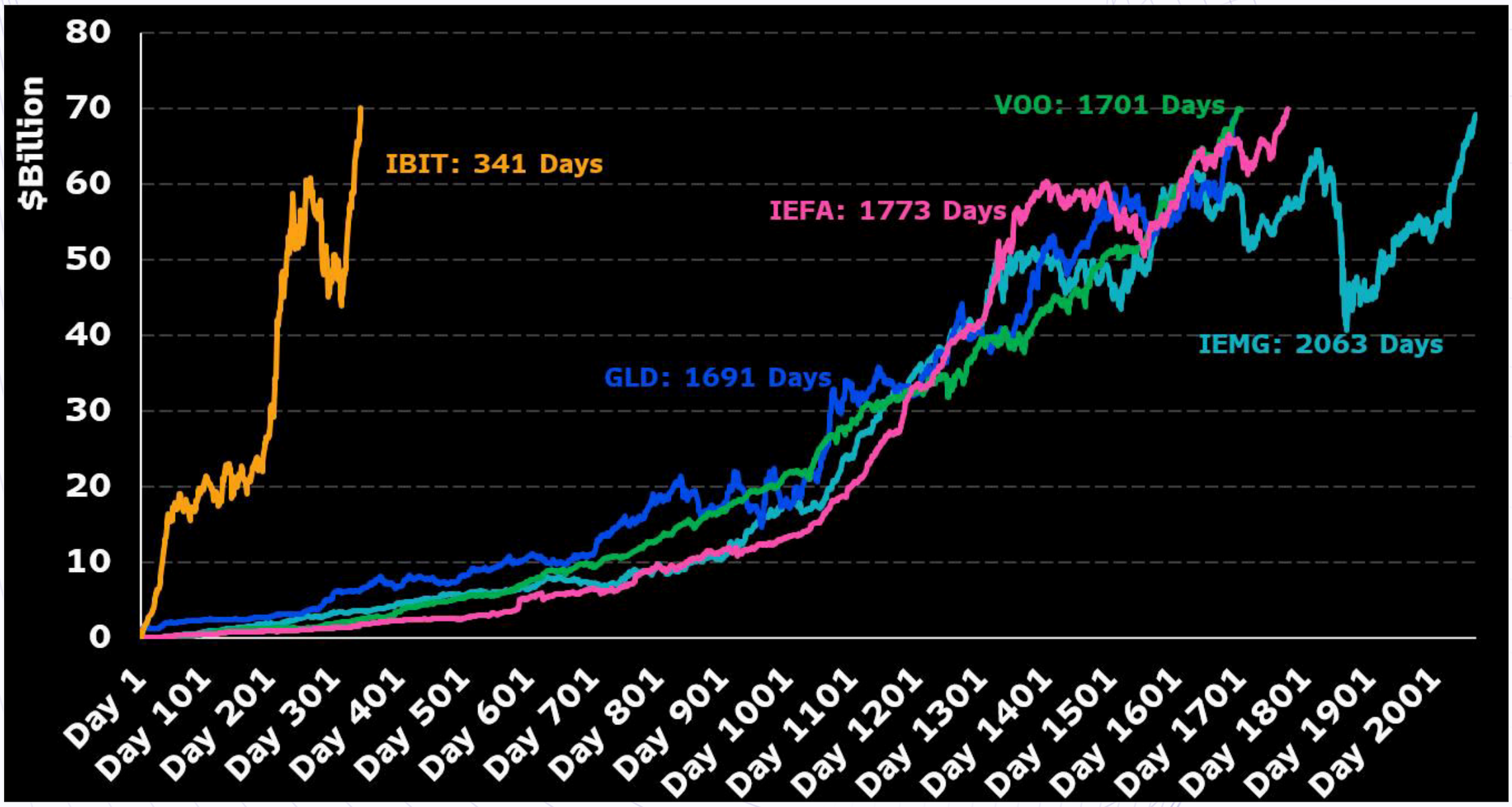
In H1, the ETF inflows were particularly strong in April and May, reflecting heightened institutional interest. On April 22 and 23, the eleven U.S. spot Bitcoin ETFs attracted over $1.8 billion in just two days. The momentum continued into May, with May 22nd recording the highest single-day inflow of the year at $934.8 million. May also saw approximately $4.7 billion in inflows over ten consecutive trading sessions—the strongest streak of ETF demand in 2025.



Net inflows ETFs were one of the main drivers of price in April and May (Source: Coinglass)

At the forefront is BlackRock's iShares Bitcoin Trust (IBIT), which has become the fastest-growing ETF in history—crossing $70 billion in AUM in just 341 days. For comparison:

- Gold's ETF (GLD) took 1,691 days
- S&P 500 ETF (VOO) took 1,701 days
- Emerging Markets ETF (IEMG) took 2,063 days



BlackRock's IBIT has become the fastest-growing ETF in history (Source: Eric Balchunas on X)

This explosive growth marks a structural shift. ETFs are not just access vehicles; they act as trust bridges between traditional finance and Bitcoin, providing millions of investors—often indirectly through pensions and asset managers—exposure to Bitcoin's upside. Major pension funds such as those in Wisconsin and Michigan have already begun allocating.

Crucially, this wave of adoption mirrors gold's post-2004 ETF-driven revaluation. The inflows are both a public signal of legitimacy and a mechanism of distribution, effectively onboarding capital into Bitcoin through established institutional channels. While current allocations may be modest (typically 1–2%), the trend is unmistakable: Bitcoin is becoming an accepted piece of institutional portfolios.

Behind this momentum lies a macro environment perfectly suited to Bitcoin's properties: finite, decentralized, unprintable, and censorship-resistant. In a world marked by sovereign debt concerns, fiat instability, and geopolitical risk, Bitcoin offers a compelling hedge.

Wall Street is not just buying the dip—it's institutionalizing the asset. The ETF era has officially begun, and the early innings of Bitcoin's revaluation may still be underway.

The Acceleration of Corporate Bitcoin Treasuries in H1 2025

In the first half of 2025, corporate Bitcoin adoption took a decisive leap forward. No longer a fringe experiment reserved for bold outliers like MicroStrategy, Bitcoin is becoming a cornerstone of corporate treasury strategy worldwide. What began as a defensive hedge or speculative allocation has transformed into a full-fledged financial engineering play and a signal of forward-looking capital strategy. This shift is underpinned by regulatory clarity, evolving financial products, and the rise of Bitcoin-native public companies.

Corporate Signals

Next to strong inflows into U.S.-listed spot Bitcoin ETFs a clear signal of growing institutional conviction came from corporate balance sheets. JPMorgan announced plans to offer Bitcoin access to its clients, Robinhood expanded into Canada via the WonderFi acquisition, and several companies revealed plans to accumulate Bitcoin as a long-term reserve asset.

Major buy announcements from Strategy (formerly MicroStrategy), Metaplanet, and newcomers like Twenty One ($XXI) reflect the growing normalization of Bitcoin as a treasury asset. Michael Saylor's Strategy continued its aggressive pace, bringing its total holdings to 597,325 BTC. Meanwhile, Tokyo-listed Metaplanet surpassed 10,000 BTC, overtaking Coinbase Global in publicly held Bitcoin.

Twenty One, expected to debut with over 42,000 BTC, is perhaps the most compelling new entrant. Backed by Cantor Fitzgerald, SoftBank, Tether, and Bitfinex, and led by Jack Mallers, its mission is simple: maximize Bitcoin per share (BPS). With a capital structure rooted in Bitcoin-native KPIs and financial strategies like convertible notes and preferred equity, Twenty One exemplifies the next generation of Bitcoin-native companies.

	Company	Location	Ticker	BTC Holdings
1	Microstrategy, Inc.		MSTR	597,325
2	MARA Holdings, Inc.		MARA	50,000
3	XXI		CEP	37,230
4	Riot Platforms, Inc.		RIOT	19,225
5	Metaplanet Inc.		3350.T	15,555
6	Galaxy Digital Holdings Ltd		GLXY	12,830
7	CleanSpark, Inc.		CLSK	12,608
8	Tesla, Inc.		TSLA	11,509
9	Hut 8 Mining Corp		HUT	10,273
10	Coinbase Global, Inc.		COIN	9,267
11	Block, Inc.		XYZ	8,584
12	Next Technology Holding Inc.		NXTT	5,833
13	ProCap BTC		CCCM	4,932
14	GameStop Corp.		GME	4,710
15	Semler Scientific		SMLR	4,449
16	Cango Inc		CANG	4,000
17	Bitcoin Group SE		ADE.DE	3,605
18	Boyaa Interactive International		0434.HK	3,350
19	Microcloud Hologram		HOLO	2,353
20	HIVE Digital Technologies		HIVE	2,201
21	Exodus Movement, Inc		EXOD	2,038
22	The Blockchain Group		ALTBG.PA	1,910
23	NEXON Co., Ltd.		3659.T	1,717
24	BITFUFU		FUFU	1,709
25	Fold Holdings Inc.		FLD	1,488
26	Canaan Inc.		CAN	1,466
27	Bitdeer Technologies Group		BTDR	1,446
28	Bitfarms Ltd.		BITF	1,166
29	Cipher Mining		CIFR	1,063
30	Remixpoint		3825.T	1,051
31	Nano Labs		NA	1,000
32	The Smarter Web Company PLC		SWC.AQ	1,000

Publicly listed companies holding over 1,000 BTC (Source: Bitcointreasuries.net)

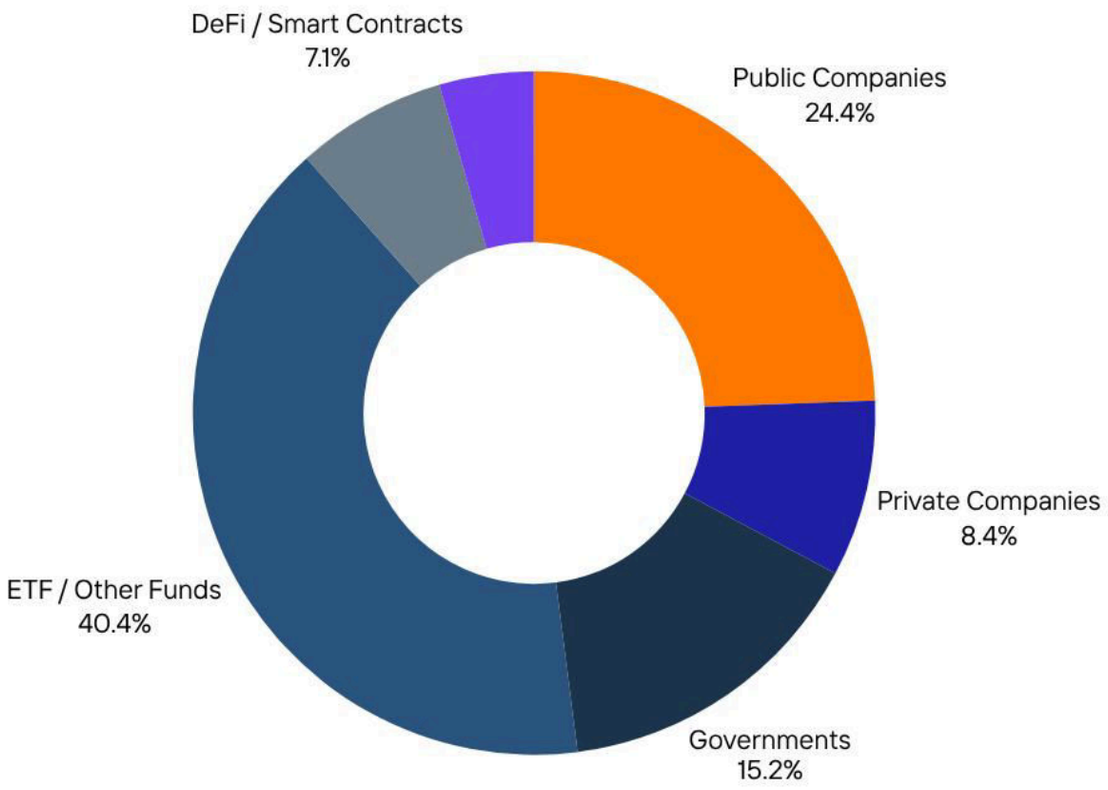
A Global Movement

The corporate Bitcoin strategy is no longer U.S.-centric. Companies across Asia, Europe, and Latin America are participating. Brazil's Méliuz, India's Jetking Infotrain, and Indonesia's DigiAsia Corp announced BTC accumulation. France’s state-owned Bpifrance and The Blockchain Group adopted Bitcoin as a store of value. Japan’s Metaplanet and Hong Kong-listed Moon are redefining corporate asset strategies in traditionally conservative jurisdictions. This geographic diversity reflects Bitcoin’s growing global relevance and highlights corporate concern about long-term fiat currency debasement.

Over 3.4M BTC in Treasuries

Bitcoin treasury companies are not just holders of a digital asset. They are pioneering a new model of corporate finance that blends capital markets and long-term conviction. These companies raise capital through equity and debt, using it to acquire Bitcoin and, in turn, offer investors equity exposure to Bitcoin with additional upside from operational leverage.

According to Bitcointreasuries.net, 61 publicly listed companies now hold 848,870 BTC, or 4% of total supply. This number is higher when factoring in private companies, miners, and family offices. In Q2 alone, corporate holdings doubled. Many of these new entrants bought Bitcoin at prices exceeding $90,000, a sign of deep conviction despite elevated valuations.



Entity Type	Amount of BTC
Public Companies	848,870
Private Companies	290,878
Governments	527,783
ETF / Other Funds	1,405,472
DeFi / Smart Contracts	248,095
Exchanges / Custodians	155,852
Total	**3,476,950**

BTC treasuries across various institutions (Source: Bitcointreasuries.net)

Financial Engineering, Leverage, and Premiums

Strategy remains the most liquid and well-established player, but imitators are growing. These firms operate with a hybrid structure: part operating company, part Bitcoin ETF. A key dynamic is the market premium these companies trade at relative to their underlying assets. When shares trade above net asset value (NAV), they can raise equity, buy more Bitcoin, and repeat the cycle.

Convertible notes are a favourite tool. These allow firms to raise fiat now while giving investors optionality in the form of future equity. Importantly, many companies use “assumed shares outstanding” metrics that price in full dilution from convertible notes, offering a conservative lens on Bitcoin per share (BPS). However, if note conversion conditions aren’t met, and cash is unavailable, forced dilutions or defaults may follow.

Some companies are essentially monetizing volatility. By selling equity-linked instruments like convertibles, they benefit from the high volatility premium in their share prices to acquire more Bitcoin, this strategy is only sustainable if managed carefully.

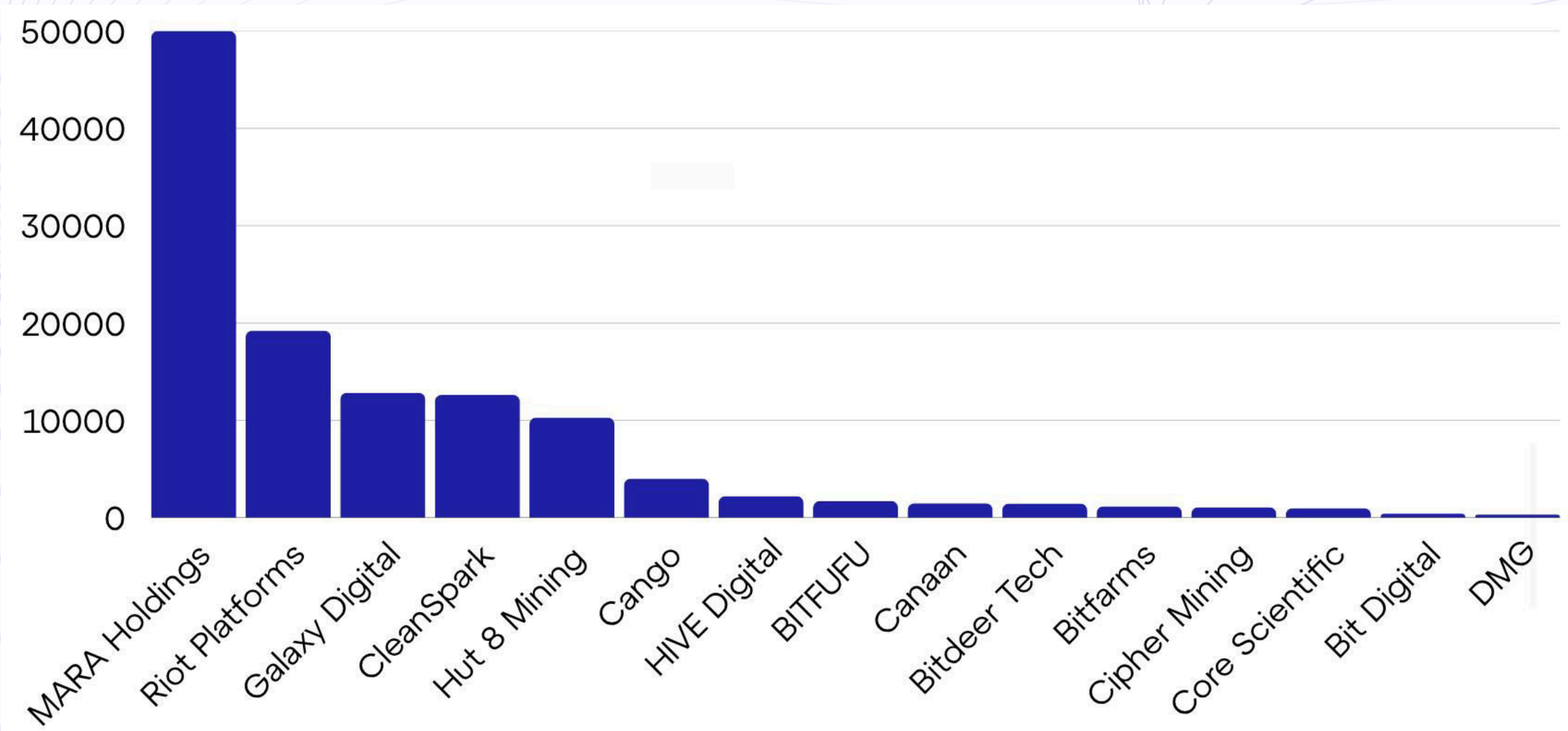
Regulatory Tailwinds and Fair-Value Accounting

In early 2025, the Financial Accounting Standards Board (FASB) introduced a pivotal rule change allowing companies to mark Bitcoin holdings to fair value. This change eliminated the asymmetric accounting treatment that penalized firms for unrealized losses without rewarding them for unrealized gains. This reform has already catalysed a new wave of corporate adoption. Twenty One and Metaplanet have embraced Bitcoin-denominated metrics such as Bitcoin Per Share (BPS) and Bitcoin Return Rate (BRR). These shifts reflect a broader change in thinking: from short-term volatility management to long-term Bitcoin-denominated value accrual. As this cycle unfolds, Bitcoin treasury companies are capturing a growing share of retail demand—capital that, in previous cycles, often flowed directly into spot Bitcoin or altcoins. At the same time, firms like MetaPlanet in Japan are seizing jurisdictional and regulatory arbitrage opportunities, tapping into markets where direct Bitcoin access remains constrained. While leverage across the space remains relatively subdued, late entrants may turn to riskier strategies to accelerate accumulation, potentially introducing volatility later in the cycle. These developments blur the line between speculative trading and long-term investment, but they also underscore a deeper trend: the rising appeal of spot Bitcoin as a foundational, real asset rather than just a financial proxy.

Bitcoin Miners: The Original Bitcoin Treasurers

Bitcoin miners were the first to build Bitcoin treasuries—not by buying BTC on the open market, but by earning it directly through block rewards. As a result, they naturally accumulated Bitcoin over time, often holding part of their mined coins on their balance sheets.

Long before public companies started allocating Bitcoin to their treasuries, miners were already managing their capital in BTC. They used it to fund operations, hedge risks, and even post it as collateral. In many ways, miners pioneered the concept of a Bitcoin-native corporate treasury.



BTC holdings public mining companies (Source: Bitcointreasuries.net)

Bitcoin Treasury Strategy vs. Hodling

Unlike individual hodling—which is often a passive, ideological commitment to Bitcoin's long-term value—a Bitcoin treasury strategy is a deliberate financial decision integrated into a company's broader capital management. It involves active decisions around allocation, custody, risk, and liquidity. Corporate treasuries must navigate regulatory compliance, accounting standards, and stakeholder expectations, often using Bitcoin not just as a store of value but as collateral or working capital. Increasingly, Bitcoin miners are evolving from simple hodlers to strategic treasury managers. Facing tighter margins and greater financial scrutiny, they are adopting structured approaches to optimize their Bitcoin holdings—balancing operational needs, market conditions, and long-term conviction.

gomining Institutional

Creative Capital Strategies in a Post-Halving Landscape

The 2024 halving has pushed Bitcoin miners to rethink how they manage capital, prompting a shift toward more creative, flexible financing strategies. With margins under prolonged pressure, miners are increasingly looking for ways to raise funds without selling their Bitcoin reserves.

Some are turning to convertible notes—hybrid instruments that combine debt with potential equity upside. For example, Cipher Mining recently raised $150 million through convertible senior notes that mature in 2030. These notes allow investors to convert their debt into shares at a premium, giving Cipher access to capital today without immediate dilution of ownership.

Others, like Riot Platforms and CleanSpark, are opting to borrow against their Bitcoin holdings instead of selling them. By using Bitcoin as collateral for loans, these miners unlock cash to fund operations or growth while maintaining long-term upside and avoiding taxable events.

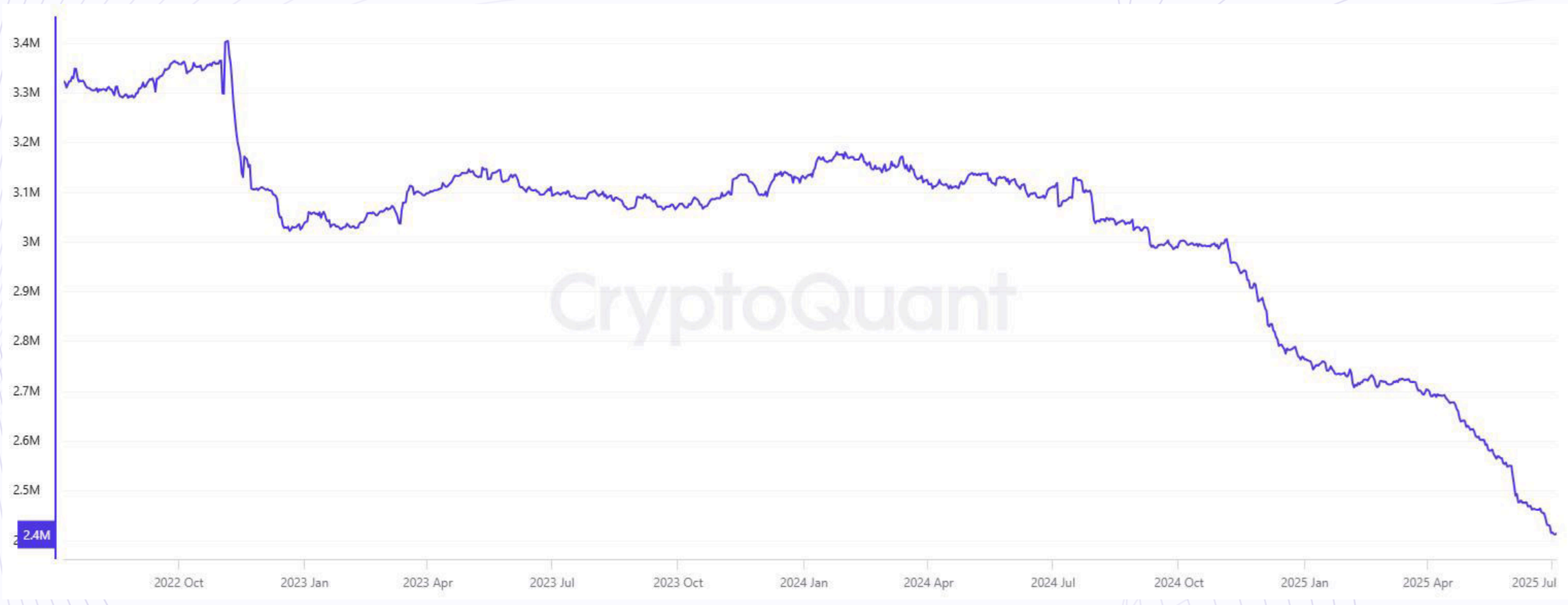
A particularly inventive approach involves using Bitcoin to finance ASIC purchases. Rather than selling their coins, miners like HIVE and CleanSpark pledge Bitcoin at a fixed, above-market price to suppliers like Bitmain. In return, they receive new machines immediately and retain the right to buy their Bitcoin back later—essentially a deferred sale with upside exposure baked in.

Finally, at-the-market (ATM) offerings have become a favoured tool for publicly traded miners to raise equity capital gradually. These programs allow companies to sell small amounts of stock directly into the market over time, providing flexibility and minimizing price impact.

Taken together, these strategies show how miners are evolving—from hodlers with high beta to active capital allocators managing risk and return. For publicly traded mining companies, creativity in capital structuring is becoming just as critical as access to cheap power and efficient machines. Miners with capital discipline and long-term planning may be better positioned to scale as industry economics evolve.

Exchange Reserve Hit Multi-Year Low

The amount of Bitcoin held on centralized exchanges has been steadily declining, signalling a notable shift in investor behaviour. According to data from CryptoQuant, exchange reserves fell by 14% throughout H1 of 2025—from over 2.89 million BTC at the start of the year to just 2.48 million BTC by year's end, reflecting a year-to-date drop of more than 410,000 BTC and marking the lowest level in over three years. This trend underscores a growing preference among investors for self-custody over keeping funds on exchange platforms.



Exchange reserves dropped all throughout H1 2025 (Source: CryptoQuant)

Exchange reserves refer to the total Bitcoin held in wallets controlled by centralized trading platforms. These reserves serve as a key liquidity source for buy and sell orders, and their size is often viewed as a proxy for market sentiment. A rising balance typically indicates an intent to trade or sell, while declining reserves suggest coins are being withdrawn for long-term storage—often interpreted as a sign of bullish conviction.

The decline in reserves coincides with the broader financialization of Bitcoin, as more investors opt to hold BTC through alternative vehicles like spot ETFs or corporate treasury strategies. These vehicles store Bitcoin with regulated custodians rather than leaving it on exchange, further contributing to the drop in visible on-chain reserves.

The sustained decline in Bitcoin exchange reserves marks a fundamental shift in how capital is stored and signalled on the network. While it may reduce market liquidity in the short term, it also suggests a strengthening base of long-term holders, reduced selling pressure, and a growing awareness of Bitcoin's value as a self-sovereign financial asset.

gomining Institutional

Explosion of Bitcoin-backed Loans

As Bitcoin matures into a robust asset class, miners and holders alike are turning to Bitcoin-backed lending to unlock liquidity without liquidating their BTC. This financial innovation has accelerated dramatically in the first half of 2025. Also in the mining industry, Bitcoin backed borrowing gained popularity as many miners are in need for working capital amid compressed margins.

Collateralized BTC loans are far from new—2021's bull run saw high-flying platforms like Celsius and BlockFi offering easy credit until they imploded under the weight of rehypothecation and opaque risk practices. On the mining side, NYDIG famously repossessed depreciated ASICs after hashprice collapsed and machine values plunged 80%, highlighting the dangers of hardware-collateralized loans. Those setbacks prompted a move toward stricter collateral policies, conservative LTVs, and transparent custody.

Use cases have diversified beyond miners. HNW individuals are now leveraging BTC to purchase real estate, defer capital gains, and optimize tax positions. Meanwhile, institutions like Xapo Bank offer $1 million loans to qualified clients, and Coinbase relaunched its BTC-collateral program via Morpho on Base, enabling US users to borrow up to $100,000 in USDC without selling their BTC.

Typical BTC-backed loans today offer loan-to-value (LTV) ratios ranging from 25% to 70%, with safer structures often clustering around the 40–50% range. Interest rates vary based on the lender and borrower profile, typically falling between 6% and 12% APR for institutional borrowers and reaching up to 15% for retail users. In decentralized finance (DeFi) platforms like Coinbase's Morpho, rates can drop as low as 2–5% under favourable conditions. Loan durations generally span from 3 to 24 months, though some providers are now offering open-ended credit lines. To manage risk in volatile markets, liquidation thresholds are usually set between 70% and 95% LTV, ensuring that lenders can act quickly if the value of the collateral drops.

Bitcoin-backed loans offer several strategic advantages for miners, who earn BTC as their primary source of revenue. These loans allow miners to finance both capital expenditures and operational costs without having to sell their Bitcoin, preserving long-term upside. They also provide tax efficiency, as borrowing against BTC typically does not trigger a taxable event, unlike selling the asset. By unlocking liquidity through loans, miners can smooth out cash flow—an especially valuable feature given the volatility of hashprice. Moreover, BTC-backed lending

aligns with a long-term “HODL” strategy, enabling miners to retain their Bitcoin holdings while still accessing needed capital. Notably, innovative repayment structures are emerging as well; for example, M2 and NiceHash now offer USDT-denominated loans that can be repaid directly with hashrate income, seamlessly integrating loan obligations with ongoing mining activity.

A broader shift is underway in traditional finance. Platforms like Galoy’s Lana are enabling community banks to originate BTC loans, aiming to reduce rates via competition. Legacy companies like JPMorgan have even begun accepting Bitcoin-ETF shares as collateral across wealth segments. All signs point to BTC-backed lending transitioning from niche crypto use to mainstream treasury management. For miners, this offers vital liquidity and flexibility; for institutions, it signals growing integration of BTC into the broader financial system.

gomining Institutional

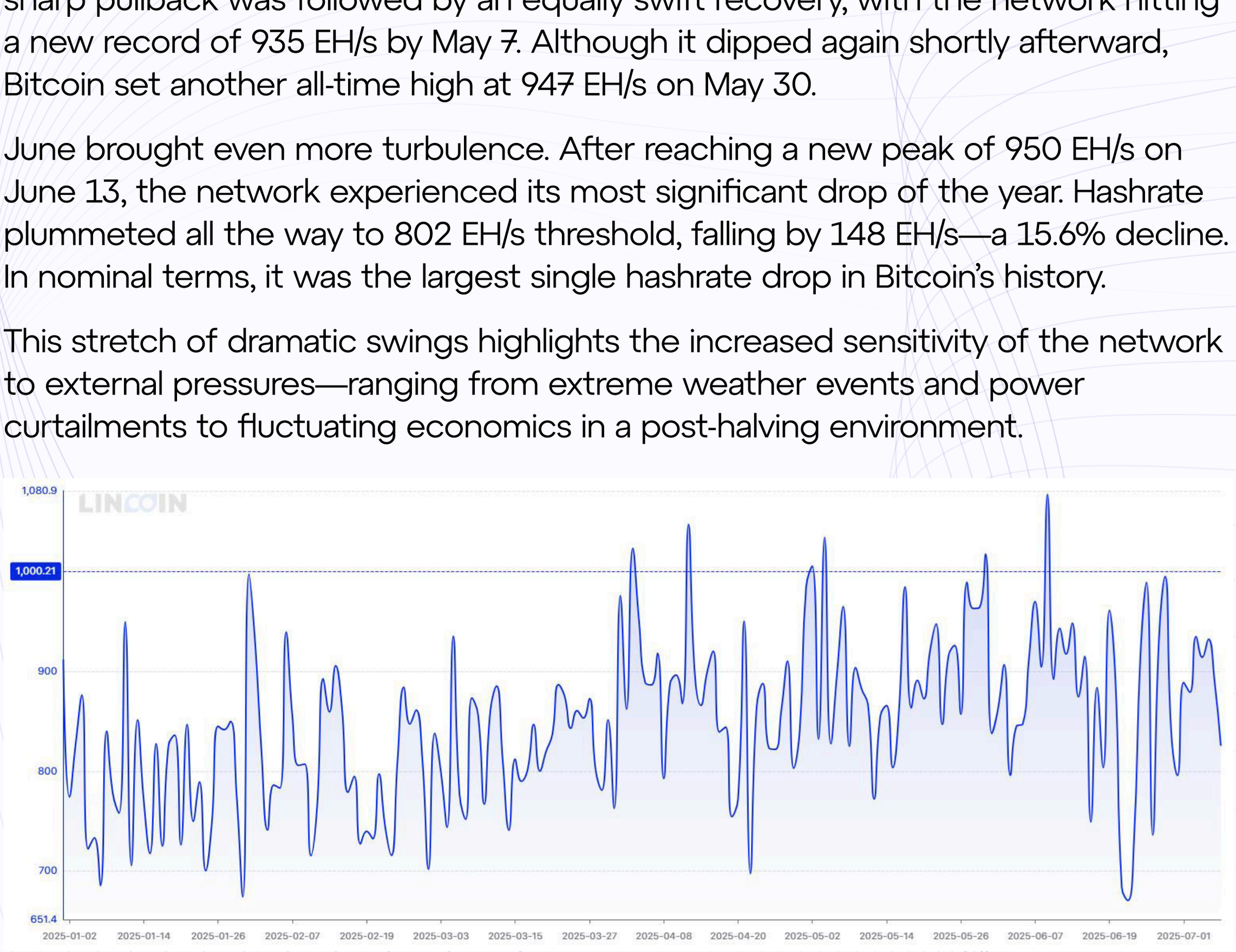
Volatility in Network Hashrate

The year began with Bitcoin's 7-day average hashrate at 807 EH/s. After a relatively quiet Q1, the network broke above 900 EH/s for the first time in April, entering a period of heightened volatility and setting multiple all-time highs throughout Q2.

In early April, hashrate surged to 929 EH/s before abruptly falling 12% to a monthly low of 817 EH/s—the steepest decline since May of the previous year and only the third time in Bitcoin's history that hashrate dropped by more than 100 EH/s. This sharp pullback was followed by an equally swift recovery, with the network hitting a new record of 935 EH/s by May 7. Although it dipped again shortly afterward, Bitcoin set another all-time high at 947 EH/s on May 30.

June brought even more turbulence. After reaching a new peak of 950 EH/s on June 13, the network experienced its most significant drop of the year. Hashrate plummeted all the way to 802 EH/s threshold, falling by 148 EH/s—a 15.6% decline. In nominal terms, it was the largest single hashrate drop in Bitcoin's history.

This stretch of dramatic swings highlights the increased sensitivity of the network to external pressures—ranging from extreme weather events and power curtailments to fluctuating economics in a post-halving environment.



Continued swings in network hashrate (Source: Lincoin Lens)

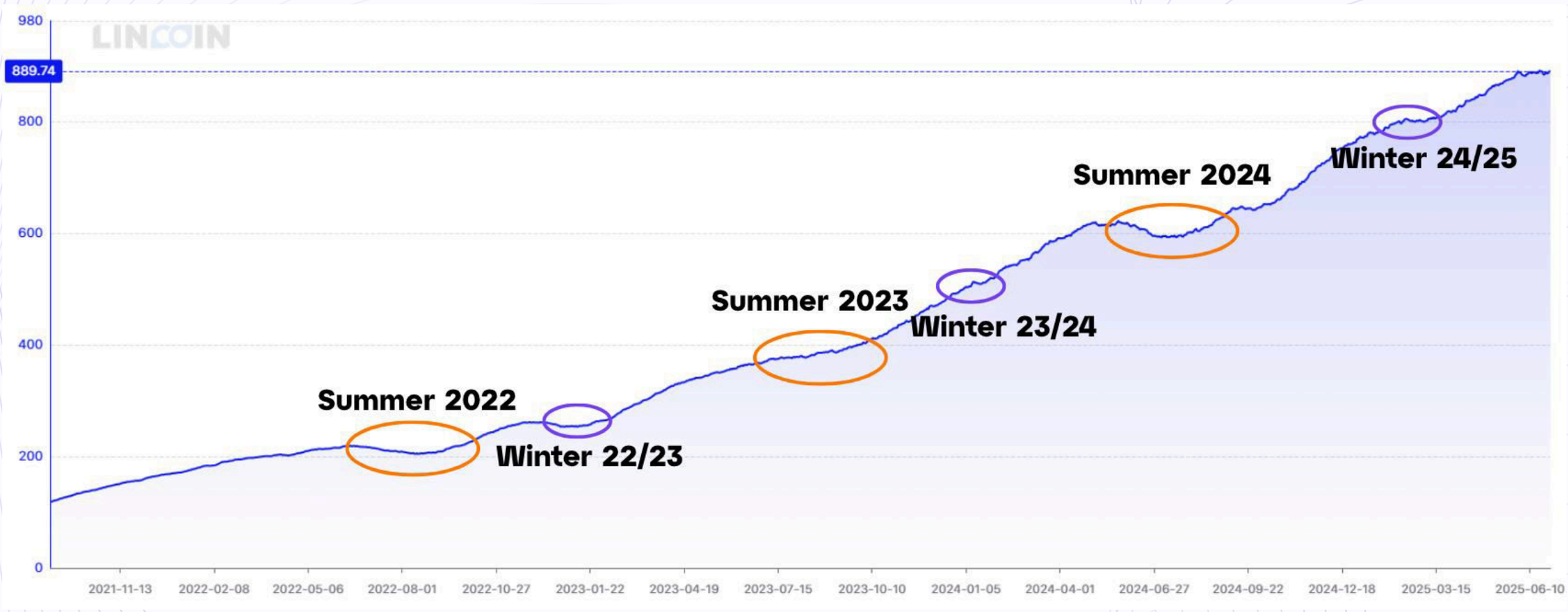
Hashrate Seasonality

Around 36% of global Bitcoin mining takes place in the U.S., and nearly half of that is concentrated in Texas. The state's appeal lies in its low-cost electricity, abundant renewables, and deregulated energy market. But with this strategic location comes a seasonal pattern: during the extreme temperatures, Bitcoin's global

hashrate often dips—largely due to miners in Texas curtailing operations.

Curtailment means temporarily powering down ASICs, either to protect mining machines from overheating or to support the grid during peak demand. Many miners participate in demand response programs, adjusting their load based on real-time signals or electricity prices. In exchange, they receive compensation or avoid costly penalties.

To maximize efficiency, savvy operators use software that predicts demand response windows and automates shutdowns, turning load flexibility into both a cost-saving and grid-supporting strategy.

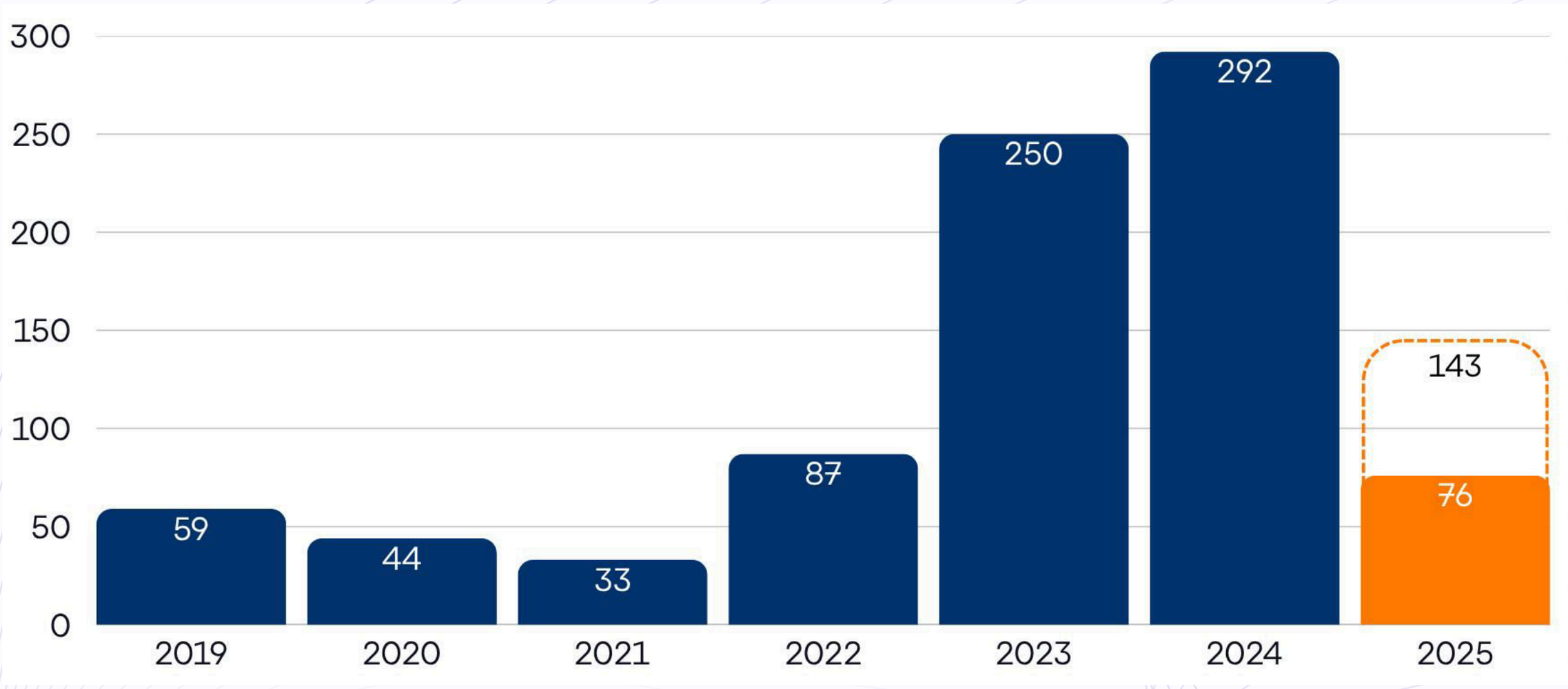


Network hashrate slows down during extreme weather events in North America (Source: LincoinLens)

2025 Hashrate Compared to Previous Years

When comparing hashrate growth in 2025 to previous years, the picture is mixed due to high volatility. If we look at the hashrate at the end of the first half of the year, growth is trailing behind the pace of 2023 and 2024. However, if we use the all-time high as a reference point, 2025 appears to be on track with those years.

In 2023, the network added an average of 20.8 EH/s per month, and in 2024, that figure rose to 24.3 EH/s. For 2025, the average monthly growth rate is 23.8 EH/s when measured from the all-time high, or 12.7 EH/s based on the current level—highlighting how much the conclusion depends on the reference point.



Annual hashrate growth (Source: Digital Mining Solutions)

1-DMA Crosses the Zetahash Mark

Amid global economic uncertainty, rising trade tensions, and a consolidating Bitcoin price, the 1-day moving average (1-DMA) hashrate surpassed the 1 Zetahash per second (ZH/s) milestone for the first time ever—equivalent to 1 sextillion hashes, or a trillion trillion calculations every second.

While the 1-DMA is more volatile and less reliable than the ~~7~~- or 30-day moving averages, this milestone underscores the extraordinary computational power now securing the Bitcoin network. During the first half of the year, the 1-DMA exceeded 1 ZH/s on six separate occasions.

gomining Institutional

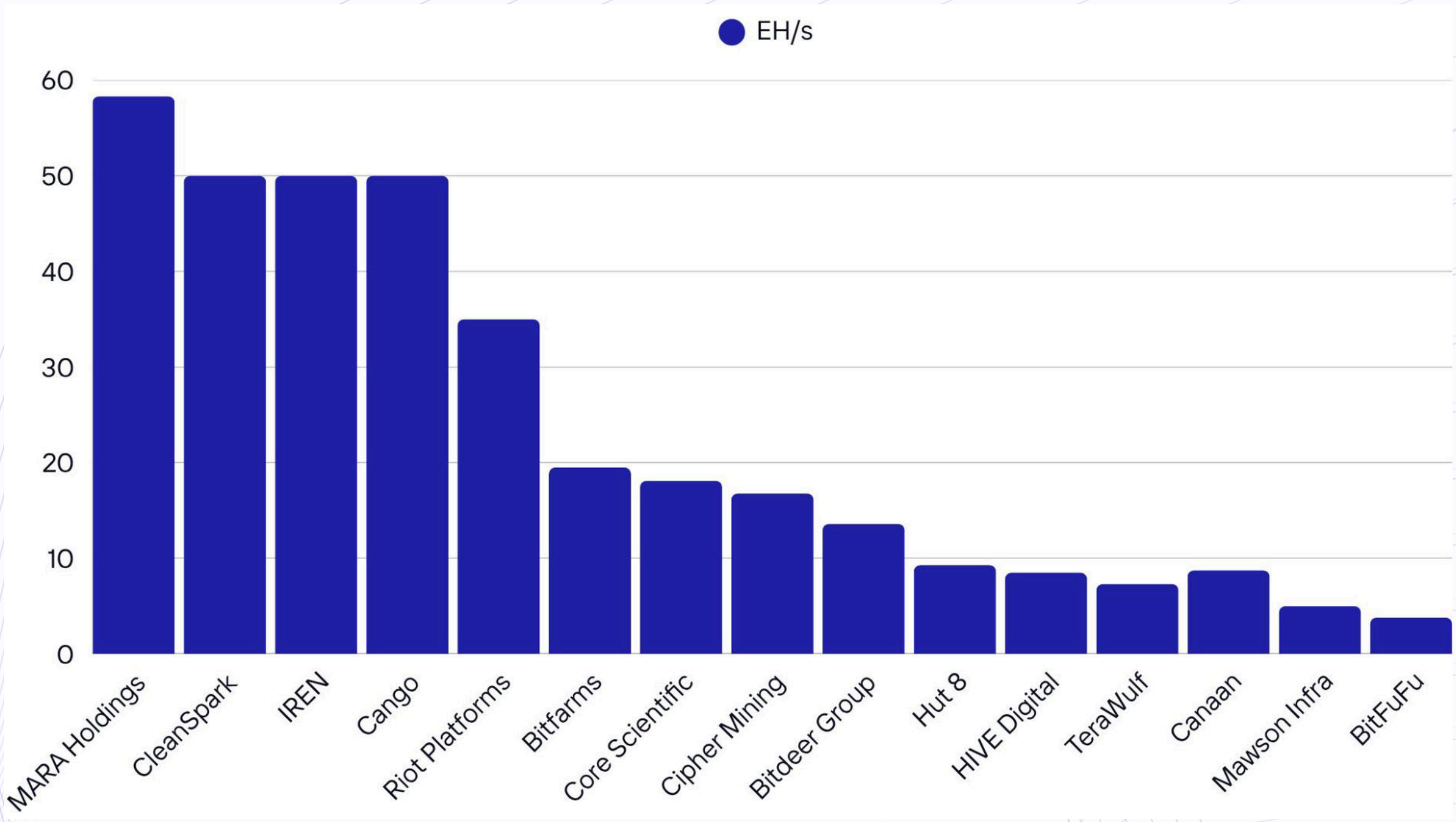
Publicly Traded Mining Giants Ramped Up

Several publicly traded companies are rapidly deploying hashrate capacity in 2025. In H1 CleanSpark and Cango surpassed 50 EH/s in realized hashrate, while IREN also boosted its operating hashrate crossing the 50 EH/s threshold. This growth secured IREN's spot as the Fourth-largest public miner, behind only Marathon (58 EH/s), CleanSpark (50 EH/s), Cango (50 EH/s). IREN aims to hit 50 EH/s by the end of Q2 but has stated it will pause further expansion to focus on developing its AI infrastructure. The combined installed hashrate of Marathon, CleanSpark, and Cango is 208 EH/s—around 23.5% of Bitcoin's total network capacity.

Bitdeer has taken a different approach by accelerating growth amid broader market hesitation. The company increased its realized hashrate by 67.5% following the deployment of its proprietary SEALMINERS. This move comes at a time when many miners are holding back expansion plans due to low profitability and weakening hardware demand.

HIVE Digital Technologies is also in growth mode, having more than doubled its operating hashrate to 8.5 EH/s. Fuelled by a BTC-backed financing structure, the company is on track to hit 11.5 EH/s by the end of June. Its long-term roadmap outlines targets of 18 EH/s by Q3 and 25 EH/s by Q4 2025, supported by 300 MW of hydro-powered infrastructure in Paraguay.

The public mining sector is clearly scaling up. At of the end of H1, nine public miners operate ovee 10 EH/s. The top 10 collectively control 320 EH/s—representing 36.3% of the global Bitcoin network hashrate.



Operating Hashrate PubCo's (Source: BitcoinMiningStock)

gomining Institutional

Private Bitcoin Miners Are Scaling Quietly but Aggressively

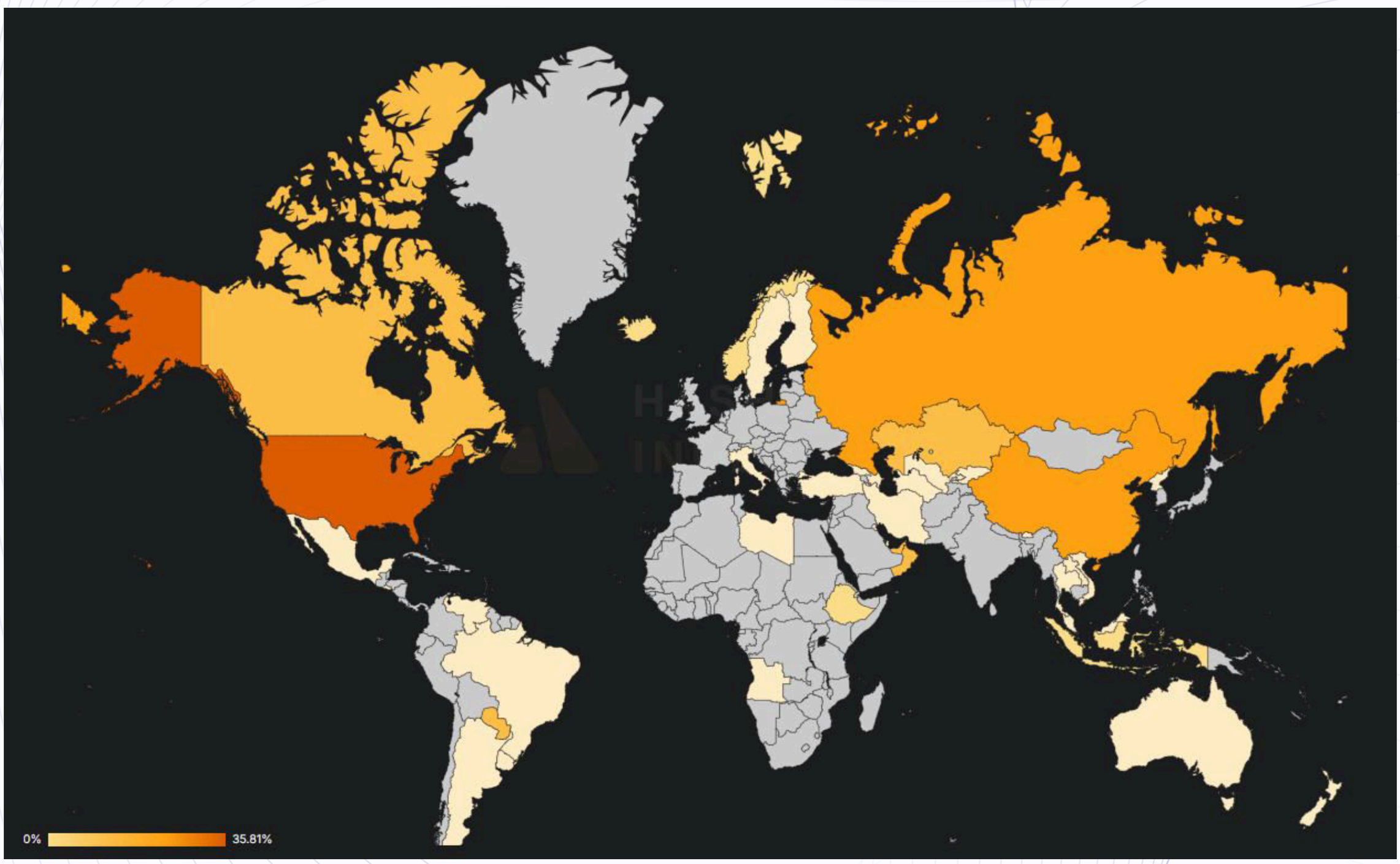
While public Bitcoin mining companies often dominate headlines, a growing number of private miners are scaling rapidly behind the scenes. These companies, unburdened by quarterly reporting and public market pressures, often operate with greater flexibility, stealth, and long-term vision. Some of the biggest names in the space are already rivalling their public peers in scale and efficiency.

GoMining is such a privately held Bitcoin mining company with deep roots in both mining operations and digital asset infrastructure. In the first half of 2025, the company surpassed 8 EH/s—a major milestone that places it among the largest private miners globally. Operating across 9 data centers, GoMining has built a strong foundation for sustained growth. Its infrastructure spans over 2.5 hectares of secured facilities and is supported by a global team. GoMining continues to expand its footprint with strategic partnerships across Latin America and the MENA region, while actively acquiring and developing new sites in the United States. With both operational scale and global ambition, GoMining is quickly emerging as one of the key players shaping the future of industrial Bitcoin mining.

Another major private force is Tether, the issuer of the world's largest stablecoin, USDT. In a bold move, Tether announced plans to become the world's largest Bitcoin miner by the end of 2025. CEO Paolo Ardoino cited the company's substantial Bitcoin reserves—over 100,000 BTC valued at more than $10 billion—as a key motivation to support and secure the Bitcoin network through direct mining operations. Ardoino emphasized that mining is a strategic hedge to protect Tether's BTC holdings. In 2024 alone, the company generated an estimated $13 billion in profit and has since funnelled over $2 billion into mining infrastructure and renewable energy projects. Tether now operates 15 sites across Uruguay, Paraguay, and El Salvador, including substations and solar-powered facilities. Despite its ambitions, Tether has yet to publicly disclose its current mining hashrate, leaving its exact scale open to speculation. Still, the company's investment strategy signals a broader shift: institutions are not just holding Bitcoin—they're actively securing it. The growth of GoMining and Tether reflects the broader trend of private firms leveraging their capital and operational freedom to scale aggressively. As capital-rich players like Tether and GoMining build out industrial-scale operations, private mining is becoming an increasingly important pillar of the network's decentralization and resilience.

Small Margins and AI Competition Slow U.S. Hashrate Growth

Despite the United States maintaining its position as the leading hub for Bitcoin mining—accounting for an estimated 36% of global hashrate according to Hashrate Index's Global Hashrate Heatmap—the first half of 2025 saw a noticeable deceleration in hashrate growth across the country. This slowdown is being driven by a confluence of factors, notably prolonged small profit margins and intensifying competition for energy infrastructure spurred by the AI and high-performance computing (HPC) boom.



U.S. dominates the global hashrate (Source: Hashrate Index)

The Hashrate Heatmap, which synthesizes data from mining pools, ASIC trading activity, and firmware adoption trends, shows that while the U.S. remains dominant, its growth rate plateaued due to economic pressure on miners and a changing energy landscape.

After the 2024 Bitcoin halving, miners across the board faced reduced block subsidies, squeezing margins and increasing sensitivity to power costs.

Traditionally, access to cheap and reliable electricity has been the foundation of profitable mining operations. But hyperscalers and AI firms, backed by significantly deeper capital reserves, are increasingly outcompeting miners for the very same power infrastructure. Bitcoin miners are being priced out or mining activities are deprioritized.

This shift is already visible in how Bitcoin mining companies are adjusting their strategies. For example, Galaxy Digital has transitioned a substantial portion of its West Texas Helios campus to support AI and HPC operations through an expanded lease with CoreWeave. After initially signing a 15-year, 133 MW deal earlier this year, CoreWeave has now exercised an option to add 260 MW, bringing its total contracted capacity at the site to nearly 400 MW. This effectively signals Galaxy's pivot from mining to compute infrastructure leasing.

Similarly, Bitfarms recently announced it has no plans for major miner purchases in 2025 or 2026. Instead, the company will focus on developing energy infrastructure and scaling HPC capabilities within the U.S. “We remain bullish on mining economics,” said CEO Ben Gagnon, “but our priority is to create long-term shareholder value through U.S. energy and HPC expansion.”

Other major players are following suit. Riot Platforms paused its planned 600 MW Bitcoin mining expansion in Corsicana, Texas, opting instead to assess AI and HPC opportunities at the site. Iris Energy (IREN) has set a self-imposed cap of 52 EH/s for its mining fleet, citing a strategic pivot to its AI cloud business, which already contributes over $25 million in annualized revenue. With nearly 2,000 GPUs, including state-of-the-art NVIDIA H100 and H200 chips, IREN’s AI services are quickly becoming a core part of its revenue stream.

The trend is not isolated to the U.S. either. In Canada, HIVE Digital’s new 7.2 MW acquisition in Toronto marks the first facility under its BUZZ HPC subsidiary. The site, set to support up to 5,000 GPUs, reflects a broader move toward building sovereign AI infrastructure and highlights how even crypto-native firms are now rebranding as data center providers.

Perhaps the most dramatic example is Applied Digital, which signed a 15-year lease agreement with CoreWeave for 250 MW at its North Dakota campus. The deal, expected to generate $7 billion over its term, positions the facility as a major AI compute hub and includes options for an additional 150 MW in the future. The first data center is scheduled to come online in late 2025, with a second and third facility in the pipeline.

All of this amounts to a major reshuffling of priorities across the mining landscape. Miners are being forced to compete not only against each other but against an entirely new class of customer with more capital, longer time horizons, and broader use cases. As electrification efforts globally continue to tighten grid capacity and as power becomes a more politicized and scarce resource, Bitcoin miners in the U.S. are being compelled to slow expansion, reconsider infrastructure investments, and in many cases, reinvent their core business models.

Looking ahead, the U.S. may struggle to maintain its dominant share of global hashrate. As competition for energy and infrastructure grows, other regions—particularly in the Global South—are emerging as viable alternatives. With abundant power, lower costs, and less pressure from AI demand, countries in Latin America and Africa, are attracting increasing mining activity. As capital shifts toward these untapped markets, U.S. dominance could gradually decline.

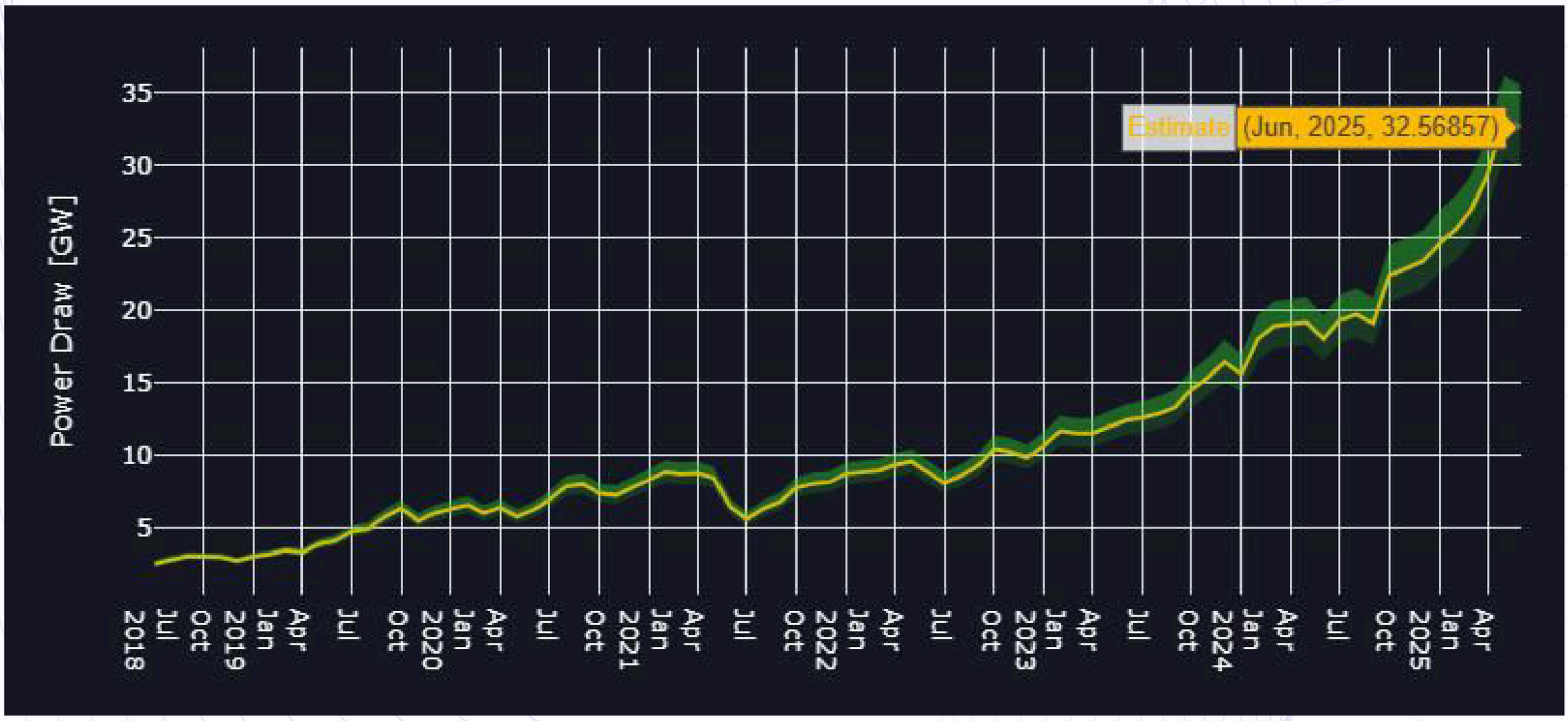
gomining Institutional

Accelerating Power Demand in Bitcoin Mining

Bitcoin's network power usage has been rising at an unprecedented pace, signalling a new phase of growth for the mining industry. According to Coin Metrics Labs, estimated energy consumption stood at 15.6 gigawatts (GW) in January 2024. By January 2025, it had surged to 24.5 GW, and just five months later, by the end of May, it had climbed even further to 33.1 GW.

This represents more than a 100% increase in just 17 months, with the steepest acceleration occurring in the first half of 2025. The January-to-May jump alone—a 35% rise in energy demand—reflects both heightened deployment of more energy-dense mining infrastructure following the April halving.

As Bitcoin mining continues to scale, efficiency gains at the machine level are increasingly offset by the sheer volume of deployed hardware. The importance of innovation is growing not just in ASIC design, but in how and where mining operations source their energy.

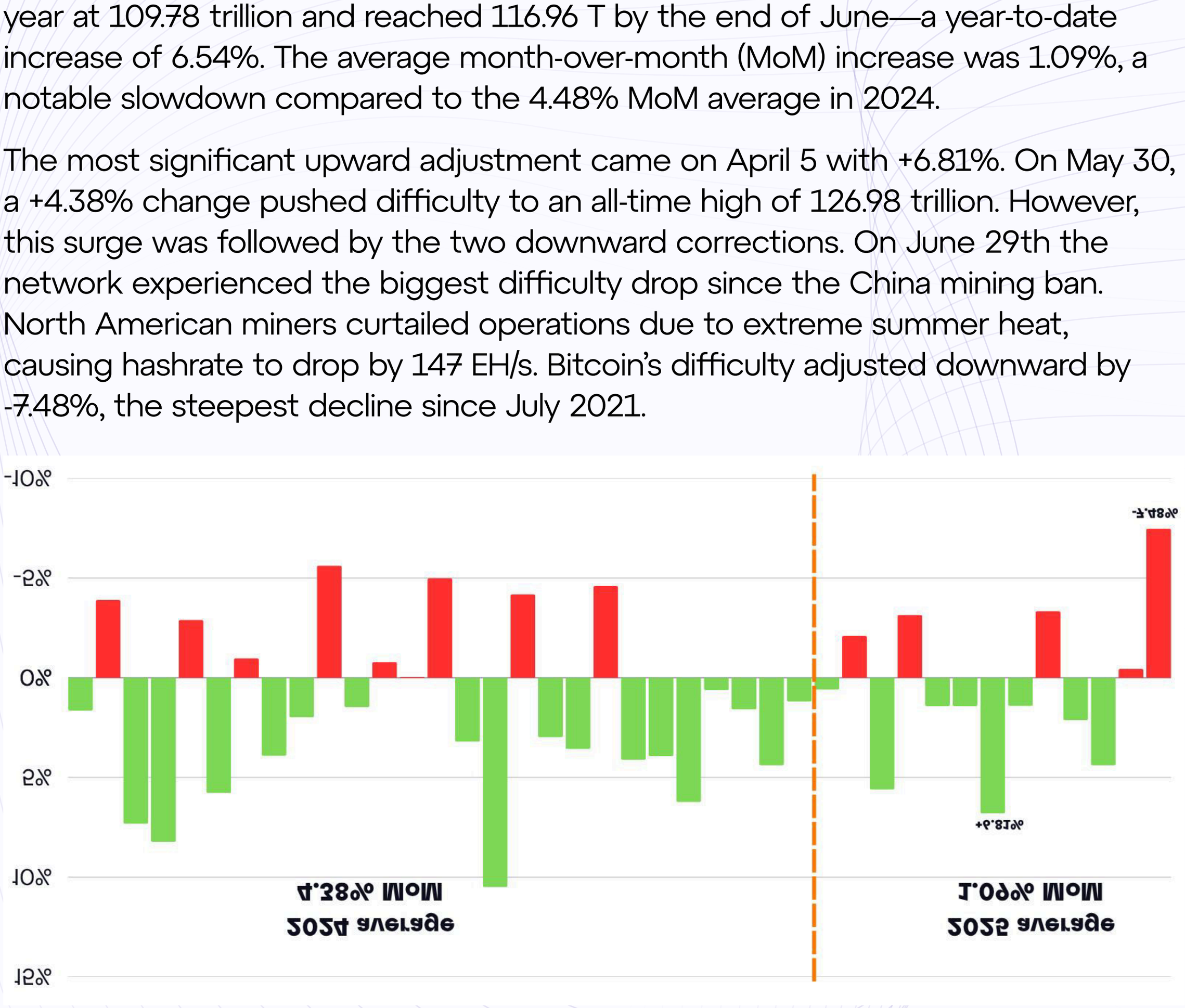


Bitcoin Mining Difficulty Muted

Network difficulty in Bitcoin mining refers to how hard it is to find a new block on the blockchain. It adjusts roughly every 14 days—or every 2,016 blocks—to reflect changes in the total network hashrate. When more miners join and total hashrate rises, the difficulty increases to keep block production stable; when miners drop off, it adjusts downward.

In the first half of 2025, the network saw 13 difficulty adjustments. It began the year at 109.78 trillion and reached 116.96 T by the end of June—a year-to-date increase of 6.54%. The average month-over-month (MoM) increase was 1.09%, a notable slowdown compared to the 4.48% MoM average in 2024.

The most significant upward adjustment came on April 5 with +6.81%. On May 30, a +4.38% change pushed difficulty to an all-time high of 126.98 trillion. However, this surge was followed by the two downward corrections. On June 29th the network experienced the biggest difficulty drop since the China mining ban. North American miners curtailed operations due to extreme summer heat, causing hashrate to drop by 147 EH/s. Bitcoin's difficulty adjusted downward by -7.48%, the steepest decline since July 2021.



2025 difficulty adjustment (Source: Digital Mining Solutions)

2025 Starts with Record-Low Transaction Fees

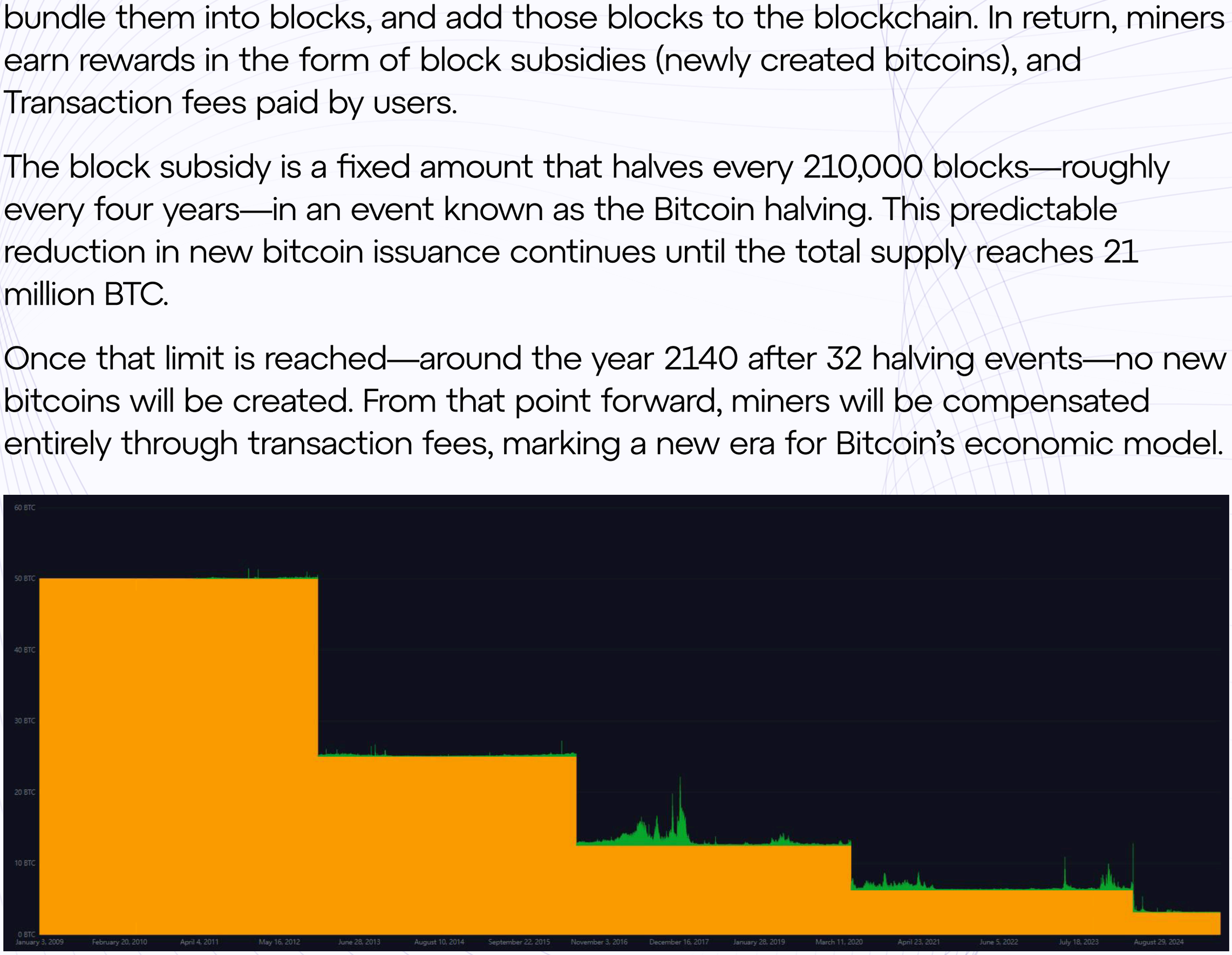
What Are Bitcoin Fees?

Unlike traditional fiat currencies—managed by central banks and processed by financial institutions—Bitcoin operates on a decentralized public ledger. There are no bank accounts, no intermediaries, and no central authority to verify transactions.

Instead, Bitcoin relies on a global network of miners who validate transactions, bundle them into blocks, and add those blocks to the blockchain. In return, miners earn rewards in the form of block subsidies (newly created bitcoins), and Transaction fees paid by users.

The block subsidy is a fixed amount that halves every 210,000 blocks—roughly every four years—in an event known as the Bitcoin halving. This predictable reduction in new bitcoin issuance continues until the total supply reaches 21 million BTC.

Once that limit is reached—around the year 2140 after 32 halving events—no new bitcoins will be created. From that point forward, miners will be compensated entirely through transaction fees, marking a new era for Bitcoin's economic model.

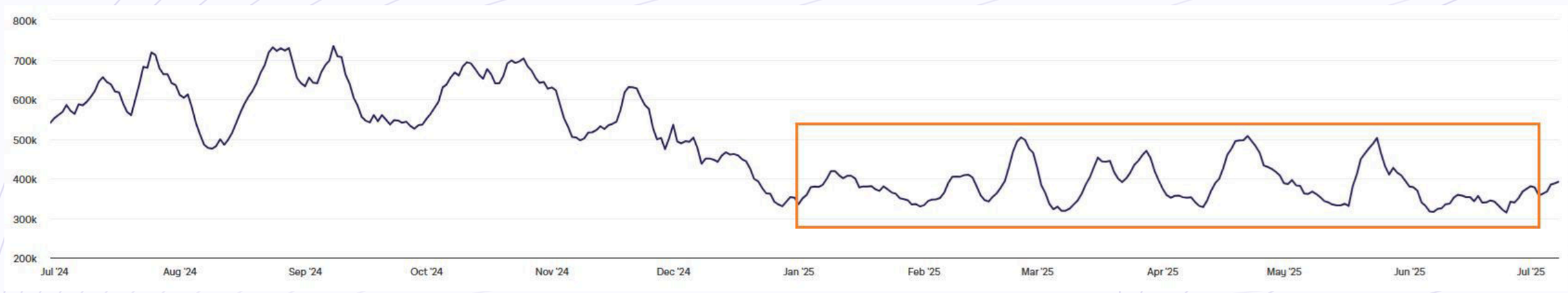


Block subsidy and transaction fees over time (Source: Mempool.space)

On-Chain Activity Slow-Down

In H1 2025, Bitcoin's on-chain activity has dropped to levels not seen since October 2023. According to The Block, the seven-day moving average of transactions fell to around 313,510 on June 25th. On June 1st just 256,000

transactions were confirmed. The last time transaction volume dipped this low was in October 2023, when the average fell to 269,000. This decline in activity comes alongside very low transaction fees.



On-chain transactions slowed down in H1 2025 (Source: The Block)

A Dynamic Fee Market

Transaction fees are what users pay to have their transactions included in a block. These transaction fees are not percentage-based like with credit cards. Instead, these fees are measured in satoshis per virtual byte (sat/vB) and based on the size of the transaction.

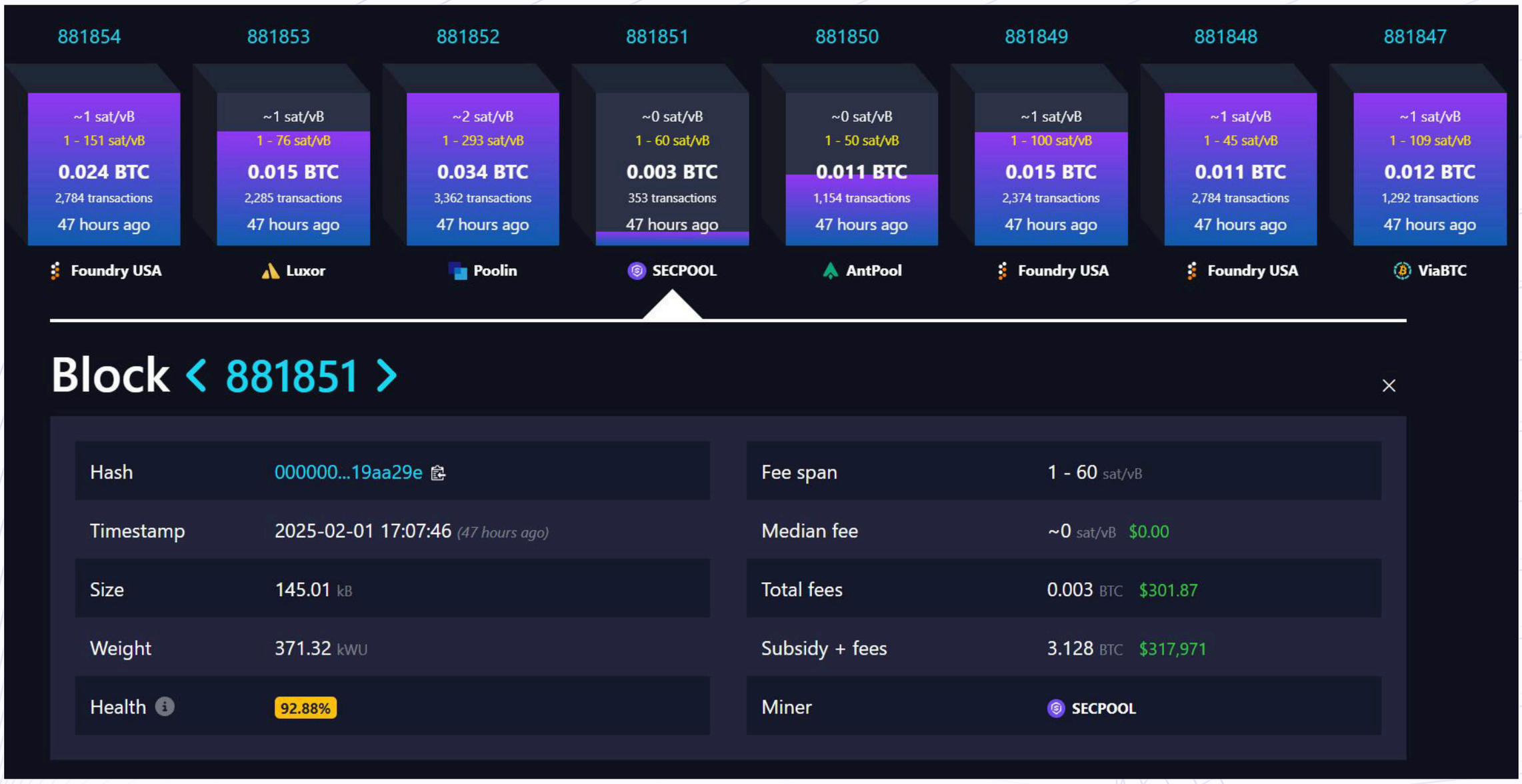
While the block subsidy is fixed, transaction fees vary due to supply and demand for block space. Key drivers of this volatility include:

- Limited Block Space: Each block can only hold ~1–4 MB of data.
- User Competition: When demand is high, users must outbid others to get confirmed quickly.
- Dynamic Fee Markets: The mempool prioritizes higher-fee transactions in real time.

All unconfirmed transactions go into a temporary holding area called the mempool (short for memory pool). When the network is busy and the mempool is full, miners prioritize transactions with higher fee rates because they are more profitable.

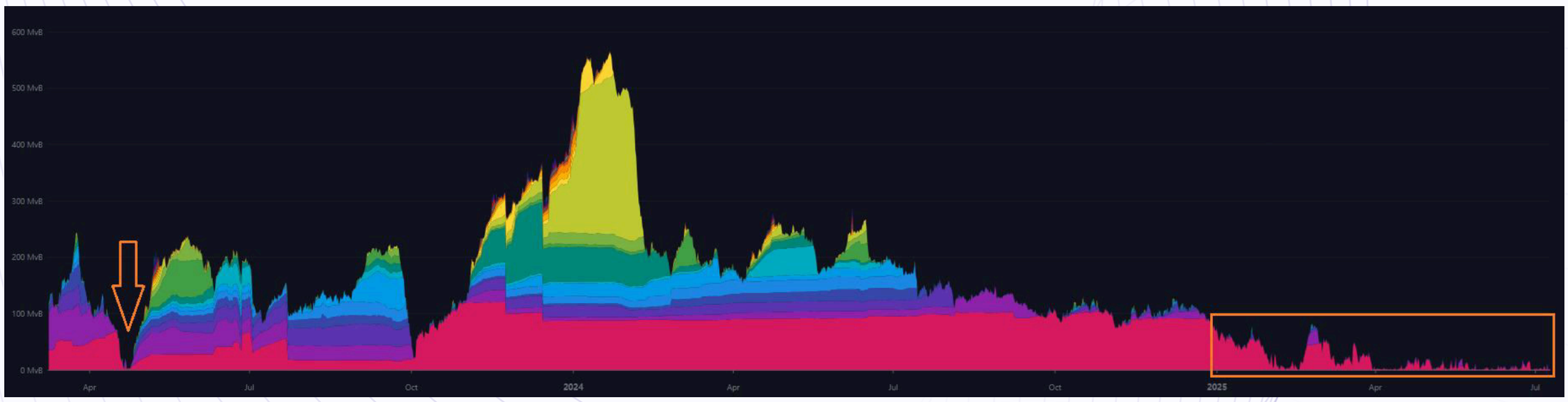
Mempool Clears for the First Time in Nearly Two Years

The Bitcoin mempool—where unconfirmed transactions wait to be processed by miners—was fully cleared twice in 2025. This means every pending transaction was confirmed and added to a block, leaving the mempool temporarily empty.



Mempool clearance and low fee rates (Source: Mempool.space)

This event was significant because the mempool has not completely cleared since April 22, 2023. A cleared mempool has become a rare event in recent years due to increasing demand for Bitcoin transactions, particularly with the rise of Ordinals and BRC-20 tokens. When the mempool does clear, it creates a brief period where transactions can be confirmed almost instantly with very low fees before congestion builds up again.



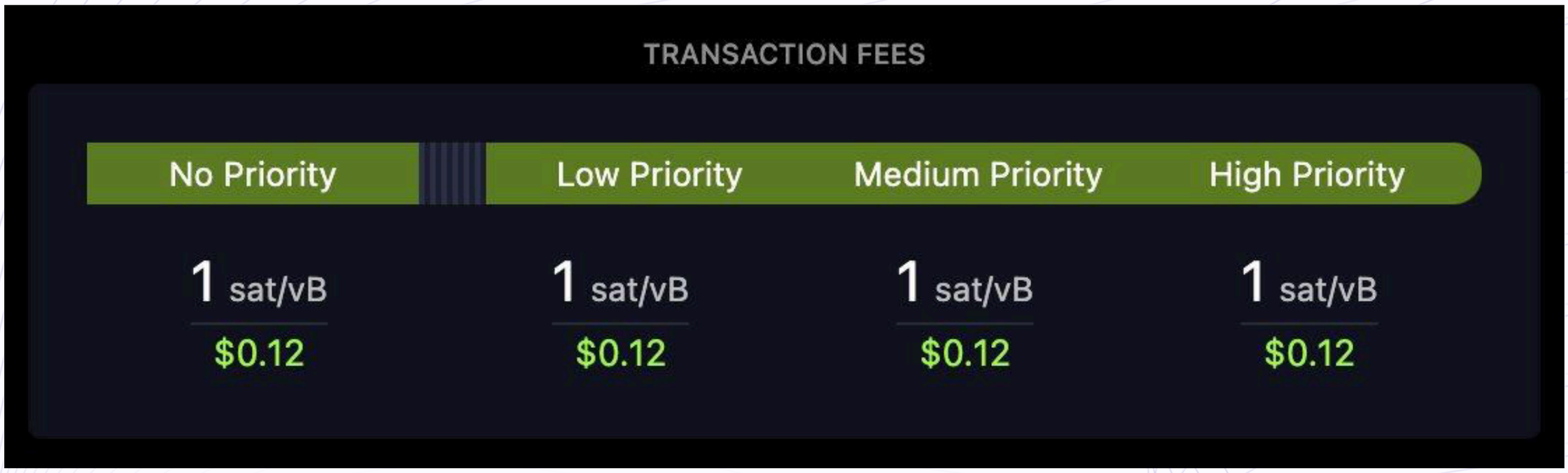
The Mempool was last cleared in April 2023 (Source: Mempool.space)

Such clearings are rare and usually indicate a combination of low network demand, ample block space, and fast transaction processing. With no backlog, users could broadcast transactions at the minimum fee rate of 1 sat/vB, regardless of priority.

As a result, many blocks this year have included low-, medium-, and even high-priority transactions paying the absolute minimum—leaving miners with almost no

transaction fee revenue.

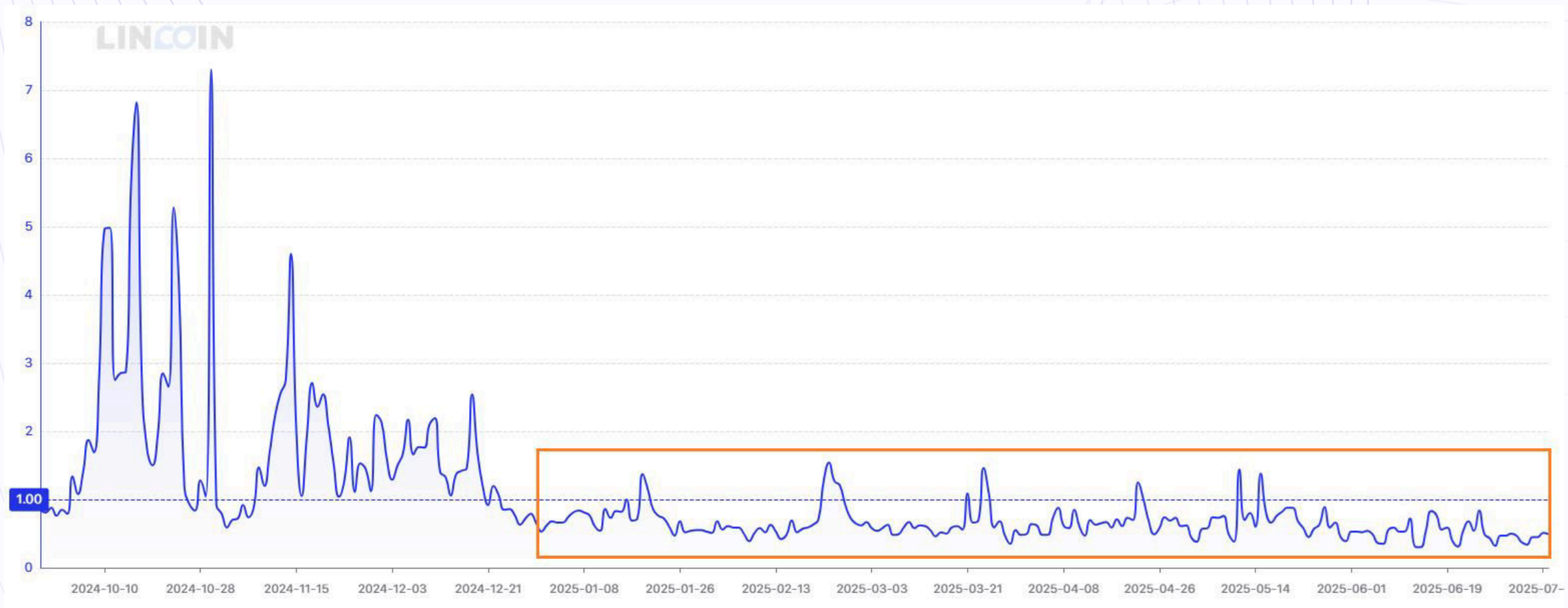
Throughout H1, there were multiple occasions when transactions—regardless of priority level—could be broadcast for the bare minimum fee of just 1 sat/vB, highlighting the persistently low demand for blockspace across the network



Minimum Fees of 1 sat/vB across all priorities (source: Mempool.space)

Fees Below 1% of Total Block Rewards

The first half of 2025 has been disappointing for miners when it comes to transaction fee revenue. In contrast to the high-fee environment of 2023 and early 2024—driven by the rise of Ordinals, Runes, and BTC staking via the Babylon protocol—fees in 2025 have consistently underwhelmed. With only a few brief exceptions, transaction fees have made up less than 1% of the total block reward throughout the year.



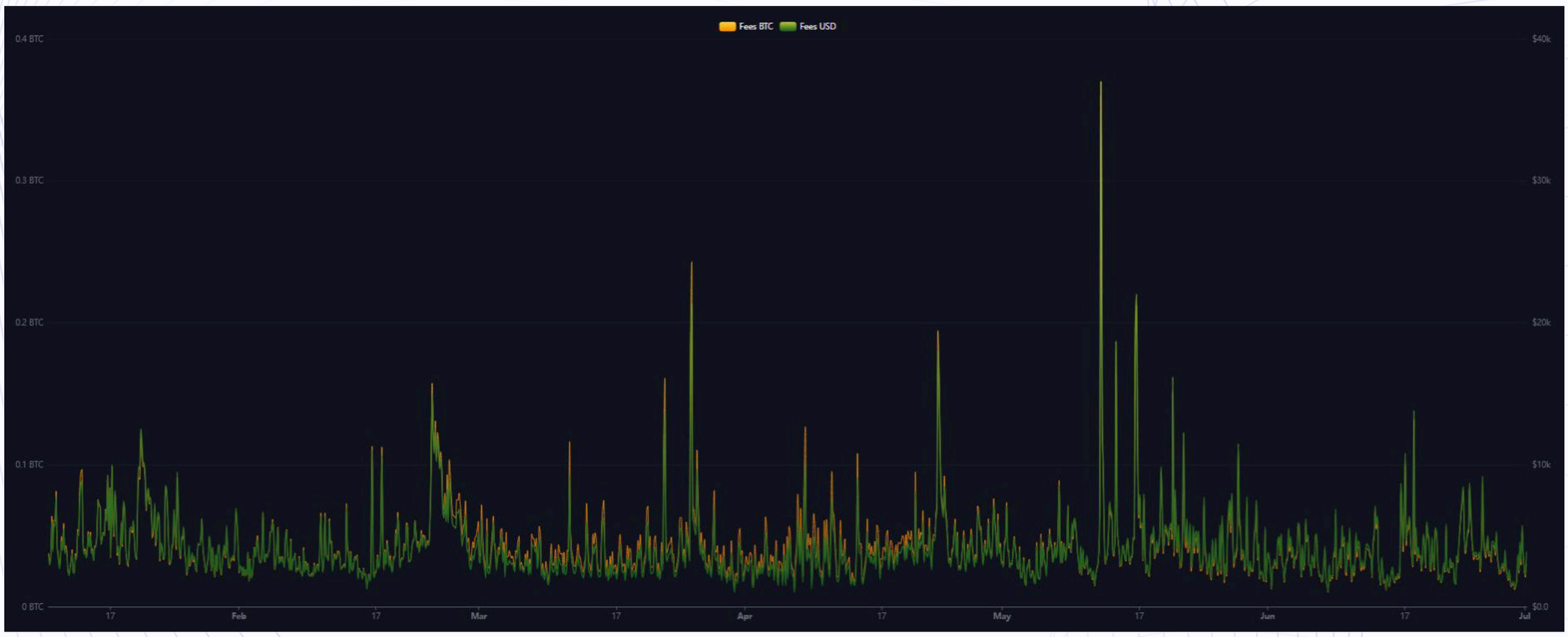
Transaction fees were below 1% of the total block reward for the most of 2025 (Source: Lincoin Lens)

gomining Institutional

Short-Lived Fee Spikes

A few short-lived spikes in transaction fee revenue were driven by outlier events. The first came between February 22–24, when a wave of BRC-20 $MASK mints caused average fees per block to surge by 130%, jumping from 0.046 BTC to 0.107 BTC. Another spike followed on March 25–26, triggered by a Taproot Wizards mint, which pushed average fees up 112%, from 0.0406 BTC to 0.086 BTC.

While brief, both events provided a welcome earnings boost for miners who remained online during those periods. In April, transaction fees surged again as Bitcoin's price rose nearly $10,000 in just two days. The latter half of May also saw a sharp increase in fees—an indicator of growing market activity that contributed to Bitcoin's run to a new all-time high.



Temporarily Spikes in transaction fees (Source: Mempool.space)

gomining Institutional

Hashprice Mostly Mirrors Bitcoin's Price

Hashprice—the dollar earnings per petahash per day—is a key metric for gauging mining profitability. It's influenced by four main factors: Bitcoin's price, network difficulty, block subsidy, and transaction fees. But with transaction fees contributing less than 1% of the block reward in H1 2025, hashprice was almost entirely driven by the block subsidy and Bitcoin's market price.

At the start of the year, hashprice stood at $56/PH/day. It peaked at $62/PH/day on January 20—around the same day Bitcoin hit a new all-time high. But as Bitcoin's price began to decline, so did hashprice. By April 7, it had dropped to a yearly low of $40/PH/day, just $2 above its historic post-halving bottom in 2024.

After bottoming out, hashprice began to recover. It climbed back to $58/PH/day and, from early May onward, managed to stay consistently above the $50/PH/day mark. Just before he end of H1 the downward difficulty adjustment of -7.48% pushed hashprice result up 8.2%, from $53/PH/day to $58/PH/day again. Despite the volatility, hashprice experienced a moderated 3.6% increase during H1.

Moderate change in Hashprice with volatility along the way (Source: Lincoin Lens)

Daily Profits S19 Turning Red

The S19 and M30S+ both operate at an efficiency of approximately 34 J/TH. As shown in the table below, these ASIC miners require an operational cost of $0.06/kWh or lower to achieve break-even at the current hashprice. Only at an opex below $0.05/kWh, these machines begin generating more than $1 in daily profit.

	Hashprice $/PH/Day								
kWh	**$40**	**$45**	**$50**	**$55**	**$60**	**$65**	**$70**	**$75**	**$80**
$0.040	$0.68	$1.16	$1.63	$2.11	$2.58	$3.06	$3.53	$4.01	$4.48
$0.045	$0.29	$0.77	$1.24	$1.72	$2.19	$2.67	$3.14	$3.62	$4.09
$0.050	-$0.10	$0.38	$0.85	$1.33	$1.80	$2.28	$2.75	$3.23	$3,70
$0.055	-$0.49	-$0.01	$0.46	$0.94	$1.41	$1.89	$2.36	$2.84	$3.31
$0.060	-$0.88	-$0.40	$0.07	$0.55	$1.02	$1.50	$1.97	$2.45	$2.92
$0.065	-$1.27	-$0.80	-$0.32	$0.15	$0.63	$1.11	$1.58	$2.06	$2.53
$0.070	-$1.66	-$1.19	-$0.71	-$0.24	$0.24	$0.71	$1.19	$1.67	$2.14
$0.075	-$2.05	-$1.58	-$1.10	-$0.63	-$0.15	$0.33	$0.80	$1.28	$1.75
$0.080	-$2.44	-$1.97	-$1.49	-$1.02	-$0.54	-$0.07	$0.41	$0.89	$1.36

Profitability table of the S19 generation ASIC miners (Source: Digital Mining Solutions)

This is relevant because, despite being released five years ago, the S19 series still accounts for around 25% of the Bitcoin network, according to CoinMetrics data. These machines remain the backbone of many mining farms. However, as hashprice stays below $60 per PH/day, the pressure on miners to upgrade their equipment continues to grow.

gomining Institutional

Premium for Latest Machines Increased

The ASIC Price Index by HashrateIndex tracks the price per terahash (TH) of various Bitcoin mining ASICs, grouped by efficiency tiers. Efficiency is measured by the ratio of power consumption (in joules) to hashrate output (TH). The lower the joules per terahash (J/TH), the more efficient the machine.

The index is expressed in US dollars (USD) per TH.

- Under 19 J/TH includes the latest generation of mining machines such as Bitmain's Antminer S21, S21 Pro, and S21 XP, as well as MicroBT's Whatsminer M66S Immersion, M63S Hydro, and M60S.
- 19–25 J/TH includes newer-generation models like Bitmain's Antminer S19K Pro and Canaan's AvalonMiner A1466 and A1366.
- 25–38 J/TH includes mid-generation ASICs such as Bitmain's Antminer S19 and S19j Pro, and MicroBT's Whatsminer M30, M50, and M53 series.

Across all efficiency tiers, ASIC prices declined during the first half of the year. However, the most efficient machines (under 19 J/TH) experienced only a moderate price drop, from $18.65/TH at the start of the year to $17.43/TH by the end of H1—a 6.5% decline.

Machines in the 19–25 J/TH range saw a sharper decrease, falling from $12.69/TH to $7.06/TH—a 44.4% drop. The 25–38 J/TH tier experienced the steepest decline, dropping 59.8% from $7.09/TH to just $2.85/TH.

This widening price gap highlights the growing premium for the most efficient, latest-generation ASICs. Demand for these top-tier machines remains high, as miners—squeezed by low margins—prioritize efficiency to stay profitable. At the same time, supply of these newer models is still relatively limited compared to older machines. In short, it's a classic case of supply and demand driving up the premium.

Price decline of ASIC miners across all efficiency tiers (Source: Hashrate Index)

While the price per terahash ($/TH) has declined, the latest models hitting the market offer significantly higher hashrate output. As a result, the actual unit prices of these next-generation machines are even higher than the $/TH premium suggests.

Next-Gen Miners Hit the Market

American Made Auradine

In H1, Auradine, a U.S.-based Bitcoin mining chip designer, has unveiled the Teraflux AH3880, a next-generation hydro-cooled Bitcoin miner. The rack-mounted miner delivers an exceptional 600 TH/s at an efficiency of 16.5 J/TH in turbo power mode while in normal power mode the machines delivers 450 TH/s at an efficiency of 14.5 J/TH. The AH3880 is part of Auradine's broader effort to challenge industry giants like Bitmain and MicroBT while reducing the sector's dependence on Chinese chipmakers.

The hydro-cooled Teraflux AH3880 (Source: Auradine)

In June, Genesis Digital Assets (GDA) placed an order for 1,000 air-cooled Teraflux AT2880 miners. The new machines—rated at up to 260 TH/s with an energy efficiency of 16 J/TH—will be deployed at GDA's 40-megawatt data center in Glasscock County, Texas. The order will represent roughly 10% of the facility's total capacity. This move reflects a strategic shift by GDA to scale its operations using domestically manufactured equipment, especially as the U.S. government weighs expanding tariffs on Chinese-made technology, which could include Bitcoin mining hardware.

Meanwhile, Marathon Digital (MARA) has sourced approximately half of its miner orders this year from U.S.-based chip designer and manufacturer Auradine, also in response to the potential trade tariffs. During the period, MARA advanced $22.3 million to Auradine for future purchases—accounting for about 23% of the

company's $97.4 million in "advances to vendors," a category that includes prepayments for mining equipment. This indicates that MARA significantly ramped up its orders for Auradine's Teraflux rigs in the second quarter.

In addition to being U.S.-manufactured, Auradine sets itself apart by offering a range of user-friendly and power optimization features. Its miners are the only ones with direct grid integration, allowing Qualified Scheduling Entities (QSEs) to modulate power use dynamically for demand response programs. Auradine's EnergyTune feature gives operators flexible control over efficiency and performance, with ECO, Turbo, and Custom modes. Other innovations include AutoTemp for thermal protection, a web-based console with API support, and Zero Touch Provisioning for streamlined setup. Additional features like FluxVision miner grouping, an integrated OLED screen, and liquid detection further enhance safety, usability, and large-scale operability.

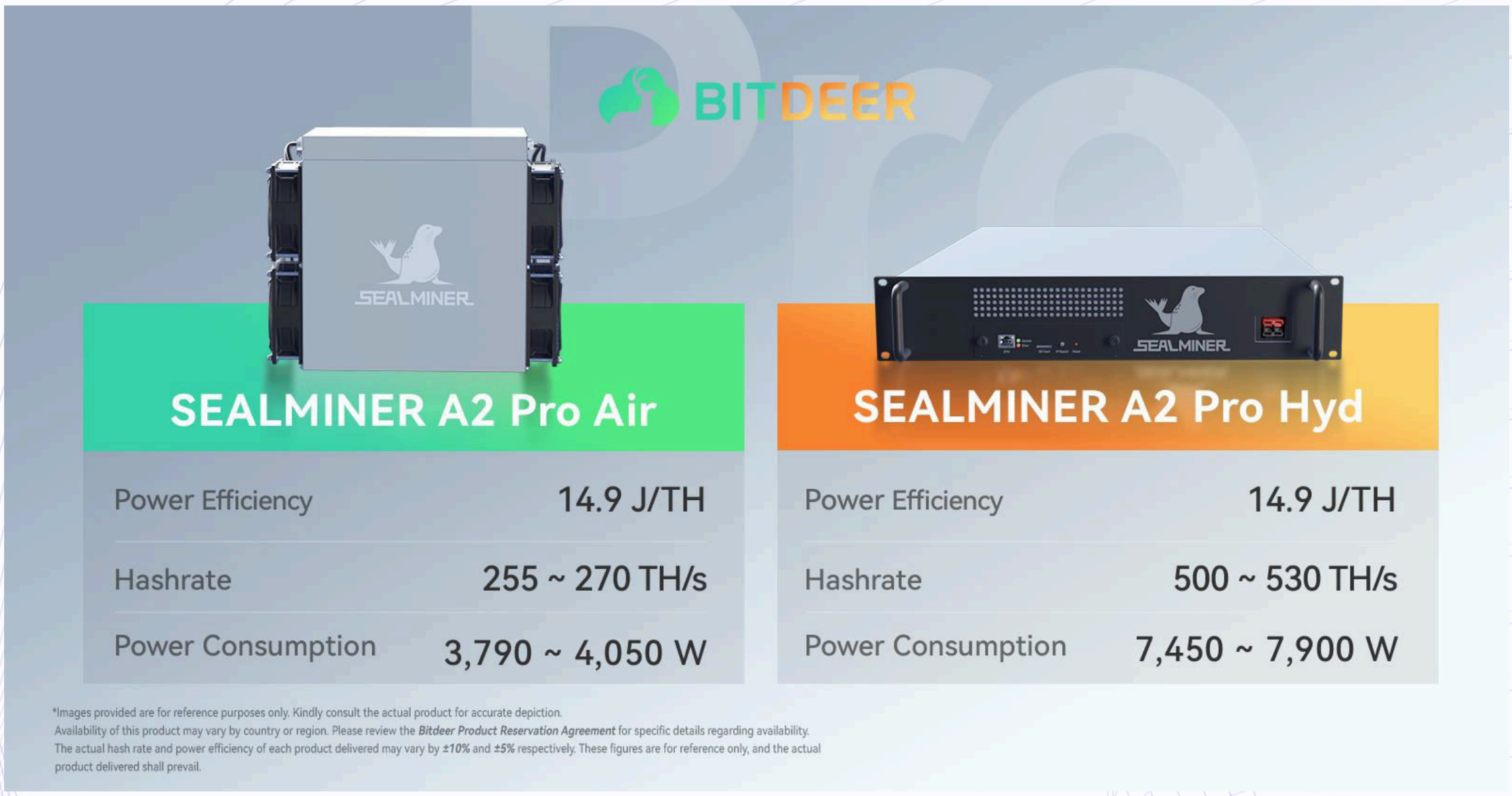
Auradine Teraflux mining systems displayed at Bitcoin 2025 (Source: Digital Mining Solutions)

Efficiency Milestones for SEALMINER Series

The mass production of the SEALMINER A2, faced a slight delay due to the 6.4 magnitude earthquake in Taiwan on January 21, 2025, pushing approximately 35 EH/s of planned mining capacity back by about a month. Before hitting the market, the first trial batch of SEALMINER A2 air-cooled models were deployed in Bitdeer's data centers for testing. Around 29,000 units (~7 EH/s of the 35 EH/s) allocated for external sales began shipping in Q2 2025. In addition to the air-cooled unit a hydro version with a 2U form factor also was released.

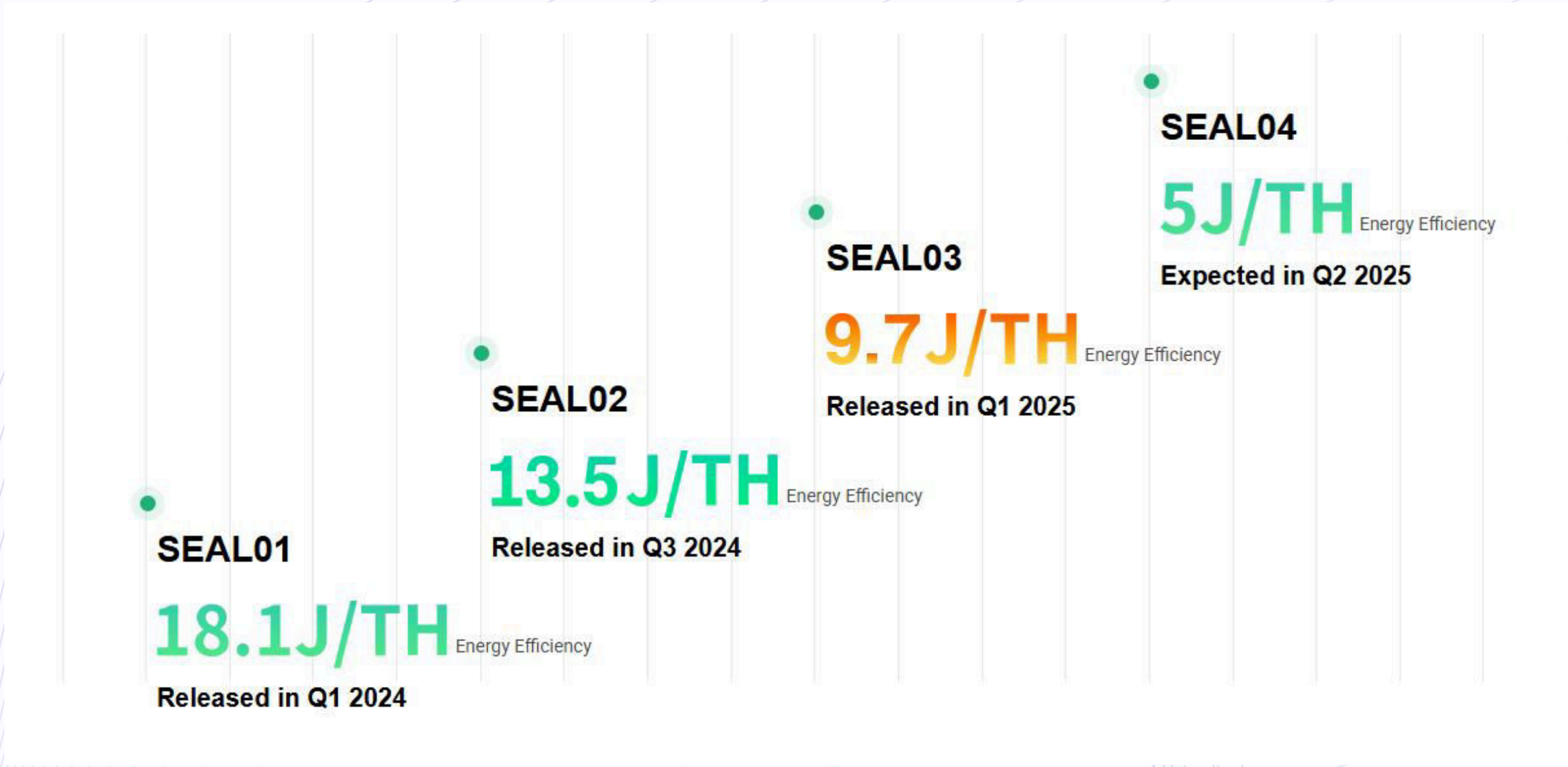
Shortly after the SEALMINER A2 Pro also made a market entry. The Pro builds on the A2 series with chip optimizations, delivering higher power efficiency. With an upgraded power supply reaching 97% efficiency, the SEALMINER A2 Pro extracts

more performance from the same power input.



The SEALMINER A2 Pro series (Source: Bitdeer)

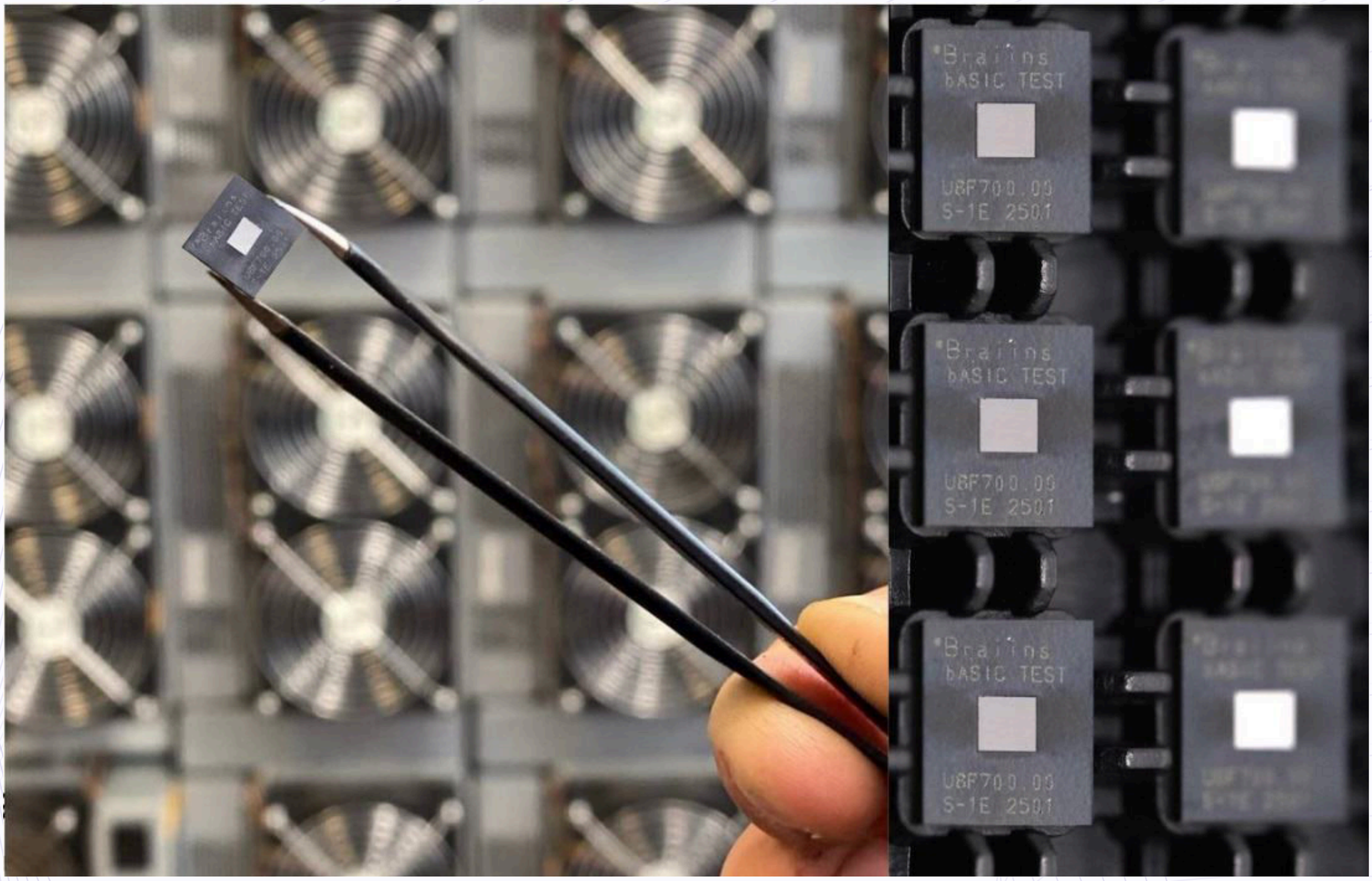
Bitdeer's new SEAL03 chip, designed for its next-generation SEALMINER A3 machines, achieved an efficiency of 9.7 J/TH in prototype tests under low-voltage, ultra power-saving conditions. This represents a major advancement in energy efficiency—an increasingly important metric as the Bitcoin mining industry faces tighter profit margins. Mass production of the SEALMINER A3 is scheduled to begin in the second half of 2025, positioning Bitdeer as a strong contender in the high-efficiency mining rig market. The company is also progressing on its SEALMINER A4, aiming for an impressive 5 J/TH efficiency, with the first chip tape-out expected in Q3 2025. These developments reflect Bitdeer's continued push to lead in performance and efficiency within the ASIC mining space.



The SEALMINER A2 Pro series (Source: Bitdeer)

Braiins Enters ASIC Market with Debut Chip Release

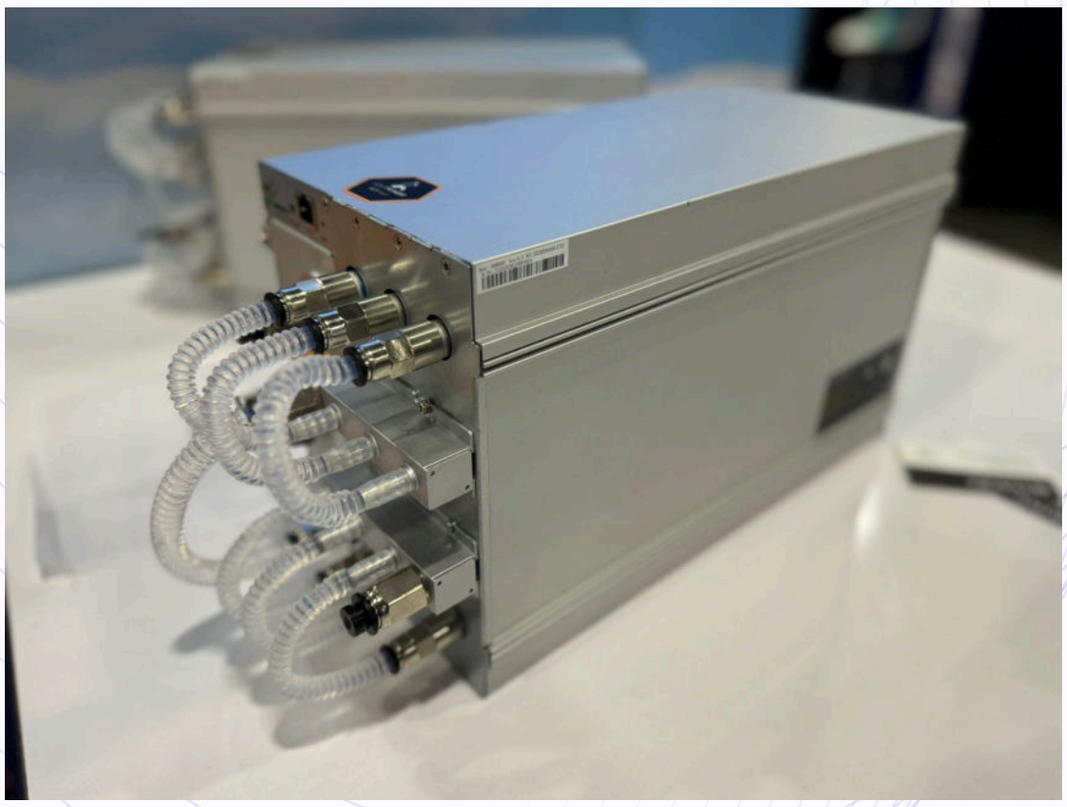
Mining pool and software company Braiins announced the arrival of its first Bitcoin ASIC chips at the company's office in Prague, marking a major milestone after more than two and a half years of research and development. These test chips represent the company's first tangible move toward entering the Bitcoin mining hardware market. While detailed specifications have not yet been disclosed, the chip delivery signals Braiins' serious commitment to competing in the ASIC space. Following the release of a mini miner last year, the company is now making a bold leap into full-scale silicon development.



Braiins ASIC Chips (Source: Braiins)

New Generation Antminer Announced

Bitmain made headlines at WDMS 2025 with the launch of its new Antminer S23 Hydro. The machine boasts a hashrate of 580 TH/s while consuming 5,510 watts of power, resulting in an industry-leading energy efficiency of 9.5 J/TH. Shipments of the S23 Hydro are expected to begin in Q1 2026.



The Antminer S23 being displayed at Bitcoin 2025 (Source: Digital Mining Solutions)

Antminer U3S23 Hyd with Over 1 PH/s in a 3U Form Factor

Alongside the Antminer S23 Hydro, Bitmain also introduced the Antminer U3S23 Hyd—a standout model in a compact 3U form factor. Most notably, it breaks the 1 PH/s barrier, delivering 1,160 TH/s of hashrate at a power draw of 11,020 watts. This translates to an impressive energy efficiency of 9.5 J/TH, matching the top performance metrics in the industry.

Future sales for the U3S23Hyd started at the end of May 2025 (Source: Bitmain)

gomining
Institutional

Operational Efficiency Becomes Key

As ASIC efficiency gains plateaus and tight margins become the new normal, Bitcoin mining is shifting into a new era—one focused on total system optimization. It's no longer enough to improve efficiency by simply upgrading mining hardware to the latest generation. The real edge now lies in how well miners can manage the entire operation. Every watt matters—not just inside the ASICs, but across the facility. Over the past decade, chip designers have dramatically reduced transistor sizes—from 55 nanometers (nm) in early-generation ASICs to as small as 3nm in the latest models. This shrinking process has delivered major efficiency gains, packing more power into less space while reducing energy use. However, as chip sizes approach the limits of physics, further gains through miniaturization are increasingly difficult and expensive to achieve. With Moore’s Law slowing down, miners must now look beyond silicon improvements and toward optimizing power distribution, airflow, cooling, and software to remain competitive.

Standardization of Form Factors

When looking at the hardware market there is an important signal of the industry's evolution, the growing adoption of 2U and 3U form factors in next-generation mining equipment. These rack-mounted designs echo traditional server architecture and hint at the first steps of convergence between mining and broader data center infrastructure.

The move toward standardized dimensions, modular cooling solutions, and rack-based management reflects a maturing industry. This trend opens the door to multi-use facilities where mining rigs, AI accelerators, and high-performance computing (HPC) hardware could coexist within shared infrastructure, especially if cooling systems are designed to support varied workloads.

Moving towards standardization with 2U and 3U form factors (Source: Bitmain, Auradine, Hut8)

As the industry enters the sub-10 J/TH efficiency era, miners must look beyond the hardware itself. True efficiency gains will increasingly come from advances in facility design, cooling infrastructure, and precision-driven software tools.

While manufacturers like Bitmain and Bitdeer are grabbing headlines with cutting-edge machines, the real long-term winners will be those who operate lean, optimize every layer of their operations, and future-proof their infrastructure for what's ahead.

Conclusion: Foundations Laid for a High-Stakes Second Half

The first half of 2025 has been anything but quiet for Bitcoin miners. Price volatility, hashrate turbulence, and fee compression have tested the sector's resilience, but beneath the surface, the infrastructure continues to mature. Institutional interest is expanding beyond ETFs into yield-linked strategies, hashrate markets are deepening, and mining is increasingly viewed through the lens of real assets and programmable energy infrastructure.

As the network adjusts to a post-halving equilibrium, all eyes are on the second half: Will on-chain activity pick up? Will capital rotate from BTC spot to infrastructure? And how will miners navigate an environment where scale, efficiency, and strategic alignment are more important than ever?

One thing is clear, mining is no longer just about block rewards. It's about positioning at the intersection of energy, capital, and compute.

GOMINING INSTITUTIONAL CONTACT DETAILS

Fakhul Miah
Managing Director,
GoMining Institutional

Email LinkedIn profile

Jeremy Dreier
Chief Business Development Officer,
GoMining

Email LinkedIn profile

Nico Smid
GoMining Institutional
Research Analyst

LinkedIn profile