Bitcoin Policy UK: Response to the Financial Conduct Authority's (FCA) Discussion Paper DP25/1 (May 2025)

We appreciate the opportunity to respond to the Financial Conduct Authority's (FCA) Discussion Paper DP25/1 (May 2025) (the "**Paper**"), concerning the regulation of cryptoasset activities. The FCA's effort to establish a regulatory framework for this rapidly evolving sector is a critical step toward balancing consumer protection, market integrity, and the UK's ambition to remain a global leader in financial innovation. The United Kingdom has historically been a pioneer and a leader both in financial services and in computing /information technology; it remains crucial both for the economy in general and for the FCA's mandates to ensure market stability, prevent customer harm, and foster economic growth, that the UK becomes an attractive jurisdiction for compliant and respected cryptoasset firms to set up and to do business. The FCA's discussion papers are welcome evidence that the regulator is beginning to take this new market more seriously and to focus on the potential advantages of being a 'second mover', with examples of regulatory regimes such as that of VARA in the UAE, MiCA in the EU, or the new proposals from Congress and the SEC in the United States to draw from.

However, we submit that a number of the policies and proposals in the Paper are likely inadvertently to achieve precisely the opposite of the FCA's intended aims and goals, and undermine elements of its mandate as set out above. We will focus our response in particular on Chapters 4 and 5 of the Paper, and the proposals outlined therein, with responses to Questions 34 ff. These Chapters relate largely to the businesses and processes of cryptoasset lending, borrowing and purchasing, and reflect an overly cautious and disproportionate approach which, far from reducing customer harm or promoting economic growth, will be far more likely to achieve the opposite of each of these aims.

We advocate for a 'same risk, same regulation', technology-specific framework that recognizes the wide diversity of cryptoassets and their use cases, rather than applying a one-size-fits-all approach derived from traditional financial regulation. Bitcoin, for example, is essentially a digital monetary asset, albeit not one issued by a nation state. A meme coin may be no more than a gambling token. A stablecoin presents a third and completely different proposition. Each of these three examples presents a different risk profile; some (such as meme tokens) may be correctly described as 'restricted mass market investments', whereas Bitcoin emphatically is not. Equally, some activities relating to cryptocurrency are more inherently risky than others - simply purchasing Bitcoin on an exchange and transferring it into one's self custody has obviously lower risk than using that Bitcoin as loan collateral, if only because one is then exposed to hypothecation and credit risk on the part of the lending institution.

Matthew Long (the FCA Director of Payments & Digital Assets) did in a 7 May 2025 interview on BBC Radio 4 show signs that the FCA is beginning to realise that its one-size fits all framework is not the correct way to regulate an asset class that covers such a broad variety of different assets with such widely divergent risk profiles. He noted in the interview that some cryptoassets are riskier than others, and that there are gradients and delineations between these investments.

Here, we wholeheartedly agree with Mr. Long. There are very stark differences between Bitcoin, a stablecoin, a meme coin like 'Fartcoin', and an NFT.

Bitcoin is a two trillion dollar asset with a market capitalization at the time of writing roughly equivalent in value to Google/Alphabet[1], offered via ETFs by some of the biggest and most well respected institutional asset managers in the world, and increasingly adopted by corporations and even nation states[2]. Fartcoin is a humourous meme coin spun up on the Solana blockchain essentially as a joke[3]. **However, the FCA categorises and proposes to regulate each of Bitcoin and Fartcoin in exactly the same way, and sends the message to the retail and institutional investor in the United Kingdom that these two assets not only have essentially the same risk profile, but are both equally worthless.**

We strongly recommend that the FCA review and revise its assessment of such wildly different assets with such extraordinarily dissimilar risk profiles. Not doing so is likely to cause severe consumer harm, since consumers are currently given the message by no less a body than our financial regulator that there is literally no difference in their potential risk of harm between buying Fartcoin and buying Bitcoin. Fartcoin may well be a 'restricted mass market investment'; **Bitcoin should be immediately removed from this definition before the FCA causes more customer damage than it already has by this category confusion**. To hold the position that these two assets are identical is to allege that the risk profile of Google/Alphabet is identical to that of a closely held company incorporated in an entrepreneur's kitchen where he or she is sole director and holds all the shares.

Bitcoin is no more a 'restricted mass market investment' than is the US dollar.

It is crucial that the FCA retains its international reputation and credibility as a thoughtful and competent regulator of this new asset class, and we urge the regulator to engage with industry participants such as ourselves to ensure that it is able fully to comprehend this new market and to move in step with other global regulators.

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[1] https://companiesmarketcap.com/assets-by-market-cap/
[2] https://river.com/learn/files/river-bitcoin-adoption-report-2025.pdf
[3] https://www.cryptotimes.io/articles/explained/fartcoin-what-is-it-and-why-did-it-explode/

Bitcoin Policy
UNITED KINGDOM

Responses to specific questions in the Paper

Question 34: Do you agree with our current intention to restrict firms from offering access to retail consumers to cryptoasset lending and borrowing products? If not, please explain why.

Bitcoin Policy UK is a not-for-profit member-funded organisation[4]. Many of our members, and others in our network, are well-regulated and well-respected firms in the Bitcoin space, either having acquired or in the process of obtaining FCA authorisation. A number of the firms in our network, for example Debifi[5], are in the process of developing or being about to launch retail lending and borrowing products in the United Kingdom, together with all the economic activity and benefits that such business and product launches would entail, such as job opportunities, leasing properties, hiring employees who will pay income tax, and themselves likely paying corporation tax - quite aside from boosting the UK's international reputation as a good place to set up and conduct such business. Debifi is by far from the only such company[6] of which we are aware that is on the verge of such a product launch[7]; and we are separately engaged in discussion with HMRC and HM Treasury[8] regarding the HMRC proposals to align the repo rules for cryptocurrency with the rules applicable to other assets so as to ensure that lending and staking transactions are treated as 'no-gain/no-loss' transactions, thereby clearing the way for new businesses and product offerings to be created for the UK market.

The FCA's proposals will immediately kill all such efforts.

Such products, where offered by compliant and regulated firms in the UK to UK consumers, would present a much safer and more transparent means of staking or lending Bitcoin than the offshore and unregulated options that are currently available. But it is precisely to these offshore and unregulated alternatives that the FCA will be driving UK customers if it goes ahead with restricting access to on shore platforms. It is trivial for any UK citizen with a working knowledge of the internet to access peer to peer unregulated services and defi protocols, and to lend or borrow as much cryptocurrency as they wish, completely outside the purview of the FCA. **Our strong policy position, and recommendation, is that legitimate, compliant and regulated cryptoasset services providers should be given the message that the UK is a welcoming jurisdiction for them, and that those UK**

[4] https://bitcoinpolicy.uk/our-members
[5] https://debifi.com/
[6] https://www.nasdaq.com/articles/jack-mallers-strike-launches-bitcoin-backed-loans-eligible-us-customers
[7] https://www.loanmycoins.com/
[8] https://x.com/freddienew/status/1887425623146049882

retail customers who wish to have the benefit of borrowing, lending and staking services should have the opportunity to choose among such regulated and supervised firms, rather than being given no choice but to seek out off-shore and unregulated services, which they will certainly do if this ban goes ahead.

In short, this action by the FCA has every chance of increasing, and not reducing, the risk of customer harm, which the FCA is mandated to minimise. This cannot have been the intention of the regulator, and we urge the FCA to reconsider this position.

However, the likely negative impact of this proposal does not end there. It reinforces the sense, already prevalent throughout the global cryptocurrency market, that in the UK we have a jurisdiction and a regulator who simply do not understand either the properties of this new asset class, or the economic opportunities it represents. This will create a compounding sequence of domestic failure in this industry - inbound investment will be deterred, firms will withdraw products, services and offices from the UK, and yet, since consumers will still want and seek out the relevant services, they will find these via off-shore routes with no guarantee that they will light upon a regulated alternative[9]. The FCA will continue to put at risk the commercial viability of home grown British businesses, which will be disproportionately affected by these actions, and in some cases may withdraw from the UK entirely or be put out of business. Each of the US, the EU, the UAE, Hong Kong and Singapore now have more thoughtful and better-informed regulators in place, which appear actually to review and pay attention to feedback from the industry that they are attempting to regulate.

Second, the added compliance burden is more than likely to push consumers toward unregulated offshore platforms. The FCA acknowledges the cross-border nature of the cryptoasset market (DP25/1, Chapter 1, para 1.18), yet its proposal risks exacerbating this issue. If UK-regulated firms face higher operational costs and delays due to CONC compliance, such UK firms may simply choose not to offer relevant products and services, and consumers may seek alternatives in jurisdictions like Singapore or the Cayman Islands, where over-collateralized lending is permitted without such stringent requirements. These platforms may lack the FCA's oversight, increasing risks of fraud, insolvency, or loss of funds - the very customer harms that the FCA seeks to prevent. Recent history is littered with examples such as FTX, Celsius, Blockfi or Hodlnaut, none of which were UK regulated but each of which were easily accessible to UK consumers. Going even further than this, it is trivially easy for consumers to access highly risky decentralised finance platforms such as Pancake Swap[10] or Thorchain[11] - exposing such customers to much higher risk of catastrophic loss.

[9] https://x.com/freddienew/status/1770109773385474152
[10] https://pancakeswap.finance/
[11] https://thorchain.org/

If the FCA places impediments in the way of customers accessing compliant and regulated businesses, they will simply seek out non-compliant and higher risk alternatives, likely leading directly to the very harms that the FCA is supposed to prevent.

Finally, the complexity of adapting CONC rules to cryptoassets could lead to misapplication or consumer confusion. For instance, defining "arrears" in a context where loans are automatically liquidated upon breaching LTV thresholds is problematic, as traditional repayment schedules do not apply. This misalignment could result in inconsistent enforcement or penalties that harm consumers rather than protect them.

The FCA's growth mandate emphasizes facilitating innovation and international competitiveness (referenced via the FCA's new strategy and strategic outcomes quoted in DP25/1, Chapter 1, para 1.11). Imposing traditional credit rules on cryptoasset lending and borrowing is in fact likely to undermine the growth objective simply by creating a regulatory environment that is less attractive than those in competing jurisdictions. Other jurisdictions have adopted crypto-specific frameworks that in some cases consider over-collateralization as a sufficient risk mitigant, that could obviate the need for extensive credit checks[12]. If the UK applies a disproportionate regime, firms may relocate to these jurisdictions, taking jobs, tax revenue, and innovation with them.

The FCA's own data indicates that 12% of UK adults own cryptoassets (DP25/1, Chapter 1, para 1.4). This number represents seven million adults, an increasingly significant market that could be stifled by overly restrictive regulation, driving activity offshore and reducing the FCA's ability to shape global standards and effectively regulate this new market.

[12] PwC Global Crypto Regulation Report 2025

Question 35: Applying Creditworthiness, Arrears, and Forbearance Rules to Cryptoasset Lending and Borrowing

The FCA proposes applying traditional consumer credit rules, as outlined in the Consumer Credit Sourcebook (CONC), including creditworthiness assessments, arrears management, and forbearance requirements, to cryptoasset lending and borrowing (DP25/1, Chapter 4, Question 35). While we support in principle the concept of re-working existing regulatory frameworks in this context, there is a risk that this approach fails to account for the fundamental differences between cryptoasset lending and traditional unsecured consumer credit. In traditional finance, creditworthiness assessments are designed to mitigate the risk of default on unsecured loans, where lenders have no immediate recourse to assets. In contrast, cryptoasset lending typically involves over-collateralization, where borrowers pledge cryptoassets worth significantly more than the loan amount — often at a loan-to-value (LTV) ratio of 50% or lower (DP25/1, Annex 2, Chapter 4, Figure 5). This practice reduces the lender's exposure to the borrower's credit risk, rendering extensive creditworthiness checks largely redundant.

Moreover, cryptoasset lending and borrowing transactions are often short-term and highly liquid, driven by market opportunities such as arbitrage or liquidity provision (DP25/1, Annex 2, Chapter 4). Applying CONC rules, which are tailored to longer-term, fixed repayment schedules, introduces unnecessary complexity and cost. For example, assessing a borrower's income and expenditure (CONC 5.2) is impractical in a context where loans are secured by price-volatile digital assets and repaid within days or weeks. This mismatch risks overburdening firms with compliance obligations that do not correspond to the risk profile of the activity, potentially deterring innovation and participation in the UK market.

The FCA's goal in this context would appear to be to protect consumers by reducing the risk of unaffordable borrowing (DP25/1, Chapter 1, para 1.11). However, applying these rules as proposed could paradoxically increase the risk of customer harm. **The over-collateralized nature of cryptoasset loans means that the primary risk to consumers is not default due to inability to repay, but rather liquidation of collateral during market volatility**. Creditworthiness assessments do little to address this risk, as they focus on personal financial circumstances rather than market dynamics. A borrower with strong credit may still lose their collateral if the market drops, while a less creditworthy borrower with sufficient collateral poses no risk to the lender.

A helpful analogy to consider here may be the buy to let housing market, where the property itself serves as the primary collateral - and may be sold so as to recover the loan amount should the borrower fail to meet repayments. In this context, creditworthiness of the

borrower is less critical owing to the value of the collateralised asset, and any cash flow that it may generate.

Question 36: Proposed Restrictions on Collateral Top-Ups for Cryptoasset Borrowing

The FCA's proposal to restrict collateral top-ups for cryptoasset borrowing (DP25/1, Chapter 4, Question 36) appears to ignore the critical role this mechanism plays in managing the inherent price volatility of cryptoassets. In traditional margin lending, borrowers can top up collateral to maintain their positions during market fluctuations — a practice codified in regulations like the EU's Margin Requirements (Regulation (EU) No 648/2012). Cryptoassets, with their higher volatility, require even greater flexibility. Platforms typically issue margin calls when the LTV ratio exceeds a threshold (e.g., 80%), allowing borrowers to add collateral and avoid liquidation (DP25/1, Annex 2, Chapter 4, Figure 5). Restricting this practice would disrupt a standard risk management tool, exposing both lenders and borrowers to unnecessary risk.

The FCA's concern appears to be over-leveraging, but this overlooks the protective nature of top-ups. By enabling borrowers to maintain their LTV ratios, top-ups prevent forced liquidations that could destabilize markets or harm consumers. Applying a blanket restriction fails to differentiate between responsible use and excessive risk-taking, imposing a blunt solution on a nuanced problem.

Failure to Achieve Goals and Increased Customer Harm

Once again, and we assume unintentionally, it appears that the FCA's proposals will be likely to have the opposite effect from that originally intended, and precisely the opposite of their mandate to prevent customer harm. **Without the ability to top up during market downturns, borrowers face a higher likelihood of liquidation at unfavorable prices**. For example, if a borrower's collateral drops in value by a significant percentage value overnight, **they could lose their entire position unless they can add funds**. This not only results in financial loss but also amplifies market volatility as mass liquidations trigger further price declines, a phenomenon observed during the 2022 crypto market crash.

As we have noted above, domestic restrictions imposed by the FCA would be likely to drive consumers to unregulated platforms that permit flexible top-ups. The FCA notes that consumers already use offshore exchanges (DP25/1, Annex 2, Chapter 2), and a restrictive UK regime would only accelerate this trend, which the FCA would be powerless to stop. Many such platforms may lack robust security or dispute resolution mechanisms, exposing consumers to greater risks than they would face under a regulated but flexible UK framework.

By limiting collateral top-ups, the FCA risks making UK cryptoasset borrowing less competitive than offerings in jurisdictions like the United States, where the Commodity Futures Trading Commission (CFTC) allows such practices under a risk-based approach. As has become a common theme in this response, this would be likely to deter firms from operating in the UK, as they seek environments where they can offer products that align with market norms. The FCA's growth objective (we refer again to DP25/1, Chapter 1, para 1.5) is undermined if businesses relocate to jurisdictions that support innovation while maintaining consumer safeguards, reducing the UK's already limited influence over the global cryptoasset sector.

Question 37: Measures to Ensure Retail Consumers Have Sufficient Knowledge and Understanding of Cryptoasset Lending and Borrowing

The FCA proposes measures such as additional appropriateness assessments for consumers (who will have already undertaken such tests) prior to their being permitted to enter into lending and borrowing arrangements. In our view, this is an approach that should be taken only with sensitivity and some degree of tailoring to individual consumers, in the same way that any offer of credit would in the ordinary course be tailored to the applicant. The risk in this context is that if the assessments are too onerous, then customers will simply use one of the many and freely available unregulated services instead.

While we are strongly supportive of education and training in the cryptoasset space, there is a risk that the proposed approach may be disproportionate since it assumes a uniform lack of competence among consumers and imposes one-size-fits-all barriers. Many cryptoasset users — 12% of UK adults per the FCA's survey (DP25/1, Chapter 1, para 1.4) — are already familiar with digital assets, perhaps more so than they may be with traditional financial products. Requiring extensive vetting for experienced users creates unnecessary friction without enhancing protection. Additionally, in some cases the 'correct' answers to questionnaires that we have seen are arguably themselves incorrect. By way of example, we cite a commonly-seen question as to whether or not it is sensible to 'diversify' between digital assets. The only digital asset investment to have delivered consistent returns over fifteen years has been into Bitcoin; while other digital assets may have seen temporary spikes in price, if you as a consumer had followed the FCA's advice and diversified away from Bitcoin, you would be more likely than not to have lost money. We cite the five year performance of Eth against Bitcoin as evidence[13].

The proposal also risks overcomplicating access to products that, when properly disclosed, are not inherently more complex than traditional margin lending. The FCA's Consumer Duty (DP25/1, Chapter 1, para 1.13) already mandates clear communication of risks and benefits, which should suffice for informed decision-making without additional prescriptive hurdles.

The FCA seeks to ensure informed consumer participation (DP25/1, Chapter 4, Question 37), but overly stringent measures could backfire, as we have noted above, owing largely to the ready availability of unregulated alternatives for customers. First, they may exclude knowledgeable consumers who balk at redundant requirements, pushing them toward these unregulated platforms where no such barriers exist. The FCA notes that 69% of UK crypto buyers currently use centralized exchanges (DP25/1, Annex 2, Chapter 7), with 11% using

[13] https://www.tradingview.com/symbols/ETHBTC/?timeframe=60M

decentralised exchanges. Many of the latter are unregulated and operate offshore. Excessive education mandates could rapidly increase the popularity of unregulated exchanges, and shift activity further outside the FCA's jurisdiction, increasing exposure to risks like poor transparency or insolvency.

Second, the effectiveness of mandatory education is doubtful. Behavioral finance research, such as Thaler and Sunstein's *Nudge* (2008), shows that even educated consumers can act irrationally under market pressure. Thus, piling on educational requirements may not prevent harm and could instead create a false sense of security, leaving consumers ill-equipped to navigate real-time risks like volatility-driven liquidations.

The FCA's growth mandate prioritizes accessibility and innovation (DP25/1, Chapter 1, para 1.11). Overly restrictive educational requirements undermine this mandate by limiting consumer participation and deterring firms from offering these products in the UK, further contributing to the 'chilling effect' that the FCA's prior decisions and actions have had on the UK cryptoasset market. Jurisdictions like the European Union, under the Markets in Crypto-Assets (MiCA) framework, rely on disclosure and risk warnings rather than mandatory education, fostering a more inclusive market. If the UK adopts a heavier-handed approach, firms may continue to favour rival jurisdictions, as they have been shown to do in the recent past, further reducing the UK's share of the global cryptoasset economy and rendering the efforts of its regulator less and less relevant.

The FCA's reputation is crucial for the UK to retain its credibility as a globally-renowned financial centre; and as before we urge the FCA to review and consider the advice and feedback offered by industry experts in this space, before adopting regulations that may inadvertently have the opposite effect from what was intended.

Question 41: Restrictions on Using Credit Facilities to Purchase Cryptoassets

The FCA is exploring whether to restrict firms from accepting credit - including payments by credit card - when customers buy cryptoassets. At paragraph 5.3, the paper notes that "*we are concerned that consumers buying cryptoassets with credit may take on unsustainable debt, particularly if the value of their cryptoasset drops and they were relying on its value to repay*."

We refer to the mechanics of credit card approvals and credit limits, and include a high-level explanation here. A customer applying for a credit card is invariably required to undergo both credit checks and an affordability analysis performed by the relevant credit card company. We refer to the FCA's own guidance on each of these issues[14], which clearly sets out that entry into a regulated credit agreement is subject to both of these checks. The first principle to note here, therefore, is that a customer who has been approved for credit should have undergone all these relevant checks, and in the majority of cases a regulated credit institution will have assessed the customer's creditworthiness and their ability to repay. **The amount of credit available to the consumer will as a result be limited to a level that the customer can afford, even before they choose to use that credit to purchase cryptoassets.** Once approved, a credit card user may typically spend their line of credit for any lawful purpose (with some notable exceptions, such as gambling). We note that the Treasury Committee did in May 2023 recommend that cryptocurrency be regulated like gambling[15] (thus exempting any capital gains from the CGT net) but this was explicitly not accepted by the regulator or by Parliament. Since buying cryptocurrency is therefore generally not accepted as being akin to gambling, therefore (despite our view being that meme coins are essentially nothing more than this) it is disconcerting that the withdrawal of the availability of credit to take part in a lawful financial activity is being classed as such effectively via the back door.

Secondly, we recommend that the FCA consider the provisions of s.75 of the Consumer Credit Act 1974. This provision provides protection for consumers who purchase goods or services using a credit card, whereby a consumer can claim money back from the credit card provider if a problem arises with purchased goods or services, following which the credit card provider, who may then seek redress from the original seller or service provider.

[14] https://www.fca.org.uk/firms/creditworthiness-and-affordability-common-misunderstandings
[15] Consumer cryptocurrency trading should be regulated as gambling

The legislation therefore potentially provides additional protection for consumers who might buy Bitcoin with a credit card, **which protection the FCA is proposing to remove**.

In short, given that (i) credit and affordability checks will limit the amount that customers can spend on cryptoassets using credit cards (unlike a situation where they might use their entire cash savings in a bank account), and (ii) that s.75 protection is also likely to apply where the relevant conditions are met, the FCA's proposal to prevent the use of credit card in cryptoasset purchases would, like many of the FCA's proposals, seem likely to increase and not reduce the risk of customer harm.

Additionally, we are of the view that the proposed blanket restriction on using credit facilities to buy cryptoassets is disproportionate because it ignores the varying risk profiles of cryptoassets, which we have discussed previously in this response. Purchasing Bitcoin with credit differs in risk from buying a speculative altcoin, yet the proposal treats them uniformly. We need not reiterate the vastly different risk profiles of Bitcoin, stablecoins, and meme coins, which should by now be more than obvious.

We note and agree with the exemption for purchases of stablecoins, but suggest that this exemption also be extended to monetary assets such as Bitcoin provided certain conditions are met (e.g. applying to an asset with a multi-year track record, full decentralisation of control and decision-making, using proof of work not proof of stake - since proof of stake coins are far more susceptible to manipulation in terms of their rules by holders of large numbers of coins - and having 99.9 % uptime over a multi-year period). Given the significant and growing demand for cryptoassets, consumers who are denied the relatively safe use of their credit cards may turn instead to unregulated credit sources, like peer-to-peer loans, with higher risks (e.g., predatory rates), or offshore platforms, bypassing FCA oversight and exacerbating the risk that these proposed regulations may be counterproductive at best and at worst, potentially harmful.

Response to Annex 1: ESG Considerations

We note that the FCA's comments in Annex 1 include reference to a common misunderstanding and widely circulated misrepresentation of the proof of work algorithm. It is regrettable that this statement does not accord with the latest academic and industry research on this topic, which we shall attempt to address here.

It is categorically false and incorrect to state that "***staking, as a validation method, is a less environmentally harmful consensus mechanism compared to proof-of-work consensus mechanisms***". We urge the FCA to ensure that it reviews the latest data and studies on this topic and also review the materials we have included here, which demonstrate the environmental benefits of the proof of work consensus mechanism - the only one that, with its methane-mitigation potential, could potentially become carbon negative in the near future.

As noted by the respected ESG investor and climate campaigner Daniel Batten on 5 May 2025, Bitcoin's environmental benefits have now been validated in at least 20 recent peer reviewed studies. The Cambridge University Judge Business School report has recently found that more than fifty per cent of the Bitcoin network is now powered by renewable energy, making it one of the cleanest industries on the planet[16].

In summary:

- Bloomberg reports that Bitcoin miners in Iceland utilize the country's surplus renewable energy, primarily from hydroelectric and geothermal sources, to power their operations sustainably (https://www.bloomberg.com/news/articles/2023-08-30/bitcoin-btc-miners-like-bit-digital-draw-from-iceland-s-renewable-energy-surplus).

- Reuters highlights MARA Holdings Inc., the largest publicly traded Bitcoin miner, launching a project in the U.S. shale patch to convert excess natural gas into power for mining, reducing methane emissions (https://www.reuters.com/technology/cryptominer-mara-taps-us-shale-patch-power-generation-new-pilot-program-2024-10-08/).

- BBC covers how Bitcoin mining in rural Africa, through companies like Gridless, uses excess renewable energy to bring electricity to remote areas, supporting local communities (Bitcoin in the bush - crypto mining brings power to rural areas - BBC News).

[16] https://www.jbs.cam.ac.uk/2025/cambridge-study-sustainable-energy-rising-in-bitcoin-mining/

- The Financial Times discusses Bitcoin's potential to drive positive environmental and social outcomes, emphasizing its role in sustainable development (https://www.ft.com/content/b26b5af8-0cf1-424b-bafc-d2ce4760a28c).

- Forbes describes Bitcoin as a key player in the green revolution, focusing on its ability to support renewable energy initiatives (https://www.forbes.com/sites/digital-assets/2023/07/07/everything-you-need-to-know-about-bitcoin-and-the-environment/).

- The Independent explores how Bitcoin mining could accelerate the global transition to renewable energy by incentivizing clean energy production (Bitcoin mining could supercharge transition to renewables, study claims | The Independent).

- The Street argues that Bitcoin is essential for the future of renewable energy, as miners increasingly adopt sustainable practices (Why bitcoin is key to the future of finance and renewable energy - TheStreet Crypto).

- Yahoo Finance reports that Bitcoin mining can combat air pollution by using energy sources that reduce harmful emissions (https://finance.yahoo.com/news/marathon-digital-sees-shift-bitcoin-054425983.html)

- Unherd shares that Bitcoin mining brought electricity to 1,800 villagers in Africa, showcasing its potential for social impact (https://unherd.com/2024/01/the-african-village-mining-bitcoin/).

- The Hill emphasizes Bitcoin mining's role in driving sustainability through green innovation and renewable energy adoption (https://thehill.com/opinion/energy-environment/4315048-bitcoin-mining-is-energizing-sustainability-through-green-innovation/).

- Euronews details how sustainable Bitcoin mining in Bhutan supports the country's energy independence by leveraging hydroelectric power (https://t.co/RiTAdmO0nS https://www.euronews.com/next/2023/05/05/bhutan-has-secretly-mined-bitcoin-in-the-himalayas-for-years-and-it-did-so-sustainably).

- Technology Review highlights a case where Bitcoin mining helped fund conservation efforts, saving an iconic African national park (Gorillas, militias, and Bitcoin: Why Congo's most famous national park is betting big on crypto).

- The 2025 Cambridge University report highlights Bitcoin mining's shift to 52.4% sustainable energy use, up from 37.6% in 2022, aligning with global efforts to reduce carbon footprints (Cambridge study: sustainable energy rising in Bitcoin mining - News & insight).

- Duke University's February 2025 study shows Bitcoin mining's flexibility in managing grid loads, potentially integrating 76 GW of new demand with minimal curtailment, easing infrastructure strain (https://www.mara.com/posts/the-duke-study-bitcoin-mining-and-the-future-of-grid-stability).

- The Open Dialogue Foundation's May 2024 report argues Bitcoin mining supports EU climate goals by leveraging renewables, countering the European Central Bank's concerns about its environmental impact (https://en.odfoundation.eu).

- Tikula Research Network's January 2024 study reveals Bitcoin mining's role in powering microgrids, offering a profitable solution to deliver electricity to 600 million sub-Saharan Africans (https://www.da-ri.org and Leveraging bitcoin mining to improve grid resilience in Africa).

- The Institute of Risk Management's September 2023 report identifies Bitcoin mining as a contributor to the green energy transition, particularly through methane mitigation efforts in Europe (Bitcoin and the energy transition by Institute of Risk Management - Issuu).

- KPMG's August 2023 analysis underscores Bitcoin mining's alignment with ESG frameworks, highlighting its potential to drive sustainable practices across industries (Bitcoin’s role in the ESG imperative).

- A June 2021 study by Rhodes et al. demonstrates that Bitcoin mining enables grids to incorporate more variable renewable energy, enhancing the efficiency of solar and wind power usage (Impacts of Large, Flexible Data Center Operations on the Future of ERCOT).