Crypto and climate reporting

Audit Insights

October 2022

ESG in the crypto world: Climate reporting and decentralized finance

Environmental, social, and governance reporting is a key focus for companies across sectors as regulations emerge,[1] including the SEC's proposed climate disclosure rules. For companies in the crypto industry, or looking to enter it, ESG reporting includes emerging industry-specific opportunities and pitfalls.

As the crypto industry has continued to grow, regulators, investors and other stakeholders such as carbon registries are more closely scrutinizing the industry's impact on the climate. They are particularly focused on crypto mining, a highly energy-intensive activity, and seeking transparency around the efficiency and energy sourcing involved. More of this activity is falling under public company reporting regulations: At the end of 2021, publicly traded miners made up approximately 18% of the bitcoin network's mining activity, a figure that is expected to rise to at least 40% by the end of 2022, according to the Blockchain Association.

It's important for crypto companies to have reliable metrics surrounding the environmental impact of their activities. Some companies may consider obtaining external assurance to support the reliability and transparency of their reported metrics. Companies who focus on these efforts will be more prepared for regulation and standards developed by the SEC, the International Sustainability Standards Board (ISSB), and/or the European Financial Reporting Advisory Group (EFRAG). In addition, they may also identify opportunities to create long-term value. Becoming a leader in ESG reporting may be a competitive advantage: In a 2022 KPMG survey, 83% of companies agreed an ESG focus would "make their business better," but only 30% said they have developed an ESG reporting strategy to communicate how ESG is integrated into their business strategy.[2]

Energy usage in the crypto industry

The crypto industry's energy usage is a hot topic for governments worldwide. Critics cite that the annual carbon footprint of crypto mining is 92.3 Terawatt-hours per year[3]. The White House Office of Science and Technology Policy published a report in September 2022 that noted the significant amount of electricity used by crypto assets and recommended that federal agencies mobilize to help minimize greenhouse gas emissions from the industry.[4] In June, New York proposed state legislation temporarily banning new crypto

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[1] KPMG LLP, "Environmental, Social and Governance Reporting," accessed October 11, 20222, https://frv.kpmg.us/all-topics/esg.html.
[2] KPMG LLP, *The ESG Journey to Assurance*, 2022, https://audit.kpmg.us/articles/2022/the-esg-journey-to-assurance.html.
[3] University of Cambridge Judge Business School, "Cambridge Bitcoin Electricity Consumption Index," https://ccaf.io/cbeci/index/comparisons
[4] Office of Science and Technology Policy, "Fact Sheet: Climate and Energy Implications of Crypto-Assets in the United States," September 8, 2022, https://www.whitehouse.gov/ostp/news-updates/2022/09/08/fact-sheet-climate-and-energy-implications-of-crypto-assets-in-the-united-states/.

mining operations, citing energy usage and environmental impact.[5] Additionally, Sweden called for an EU crypto mining ban this year.[6]

Because the blockchain networks underlying crypto assets are decentralized, they require consensus mechanisms, such as proof-of-work or proof-of-stake, to validate transactions. Proof-of-work validation, or mining, incentivizes the use of a high level of computing power, typically a large data center, because of economies of scale and intense competition among miners to validate transactions and receive the related transaction fees and block rewards. The greater the miner's computing power, the more likely it is to earn the right to validate transactions.

On proof-of-stake blockchains, holders of the blockchain's native crypto asset can bond, or stake, their tokens to the network.[7] During the staking period, the tokens are restricted from being traded freely. In return, the asset owner receives opportunities to validate transactions and earn staking rewards, which are typically newly minted tokens. The probability of earning the right to validate transactions (and earn the related transaction fees and staking rewards) is a function of the amount of tokens staked on the blockchain, rather than a function of computing power.

Not all proof-of-stake blockchains are equal in terms of the energy consumption necessary to validate transactions; however, even the most energy-intensive proof-of-stake blockchain generally uses orders of magnitude less energy than its proof-of-work counterparts on both a gross and per transaction basis. Some proof-of-stake blockchains use roughly the same amount of energy as centralized payment systems.[8] As proof-of-stake blockchains proliferate and grow, those with higher levels of energy efficiency may benefit from additional investment.

The climate opportunity for crypto and blockchain

Bitcoin miners are increasingly using or transitioning to more sustainable energy sources to power their efforts. For example, some miners use excess power from hydroelectric plants. Others use flared natural gas to power their computing equipment. Flaring, typically associated with oil extraction, is the environmentally harmful practice of burning natural gas off into the atmosphere to control equipment pressurization. The World Bank aims to end this practice in the next decade;[9] crypto mining may help by using that gas instead of burning it. Miners are also working with solar and wind power producers to consume electricity that would otherwise go unused when demand is low. Overall, bitcoin mining companies cited a 58% sustainable energy mix as of the first quarter of 2022, according to the Bitcoin Mining Council.

In addition to improving energy efficiency and adopting sustainable power sources, some blockchains are exploring additional ways to achieve carbon neutrality; this includes several that have adopted carbon offset programs. Also, blockchain technology lends itself to certain goals of environmental reporting and emissions reduction, such as its use to verify and facilitate the exchange of carbon credits.[10]

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[5] New York State Senate, "Senate Bill S6486D," accessed October 11, 2022, https://www.nysenate.gov/legislation/bills/2021/s6486.
[6] Sandali Handagama, "Crypto Advocates Push Back on Sweden's Call for EU Mining Ban," *CoinDesk*, February 9, 2022, https://www.coindesk.com/policy/2022/02/09/crypto-advocates-push-back-on-swedens-call-for-eu-mining-ban/.
[7] KPMG LLP, "Crypto as an Asset Class: Risks and Opportunities of 'Staking' Your Claim," June 30, 2022, https://info.kpmg.us/news-perspectives/advancing-the-profession/crypto-as-an-asset-class-risks-opportunities-staking-your-claim.html.
[8] Moritz Platt *et al.,* "The Energy Footprint of Blockchain Consensus Mechanisms Beyond Proof-of-Work," *2021 IEEE 21st International Conference on Software Quality, Reliability and Security Companion*, (December 2021): 1135-1144, https://ieeexplore.ieee.org/document/9741872.
[9] World Bank Group, "Zero Routine Flaring by 2030," accessed October 11, 2022, https://www.worldbank.org/en/programs/zero-routine-flaring-by-2030.
[10] KPMG LLP, "What Role Might Blockchain Technology Play in the Future of Scope 3 Environmental Reporting?," September 15, 2022, https://info.kpmg.us/news-perspectives/advancing-the-profession/blockchain-climate-reporting.html.

Asset managers will be paying attention to the nuanced conversation around crypto and sustainability as they face increased investor demand for ESG offerings, and to avoid those seen as unfriendly to ESG objectives.[11] Demand for climate and socially conscious investments is ballooning. In 2021, there were 534 sustainable funds available to U.S. investors, up from 392 funds the prior year.[12] Proposed SEC rules specific to asset managers – to address "greenwashing" in fund names and to establish standardized disclosures for ESG funds – will be part of a landscape that increases the demand for reliable, comparable climate data, including from crypto companies.

Approaches to climate reporting and assurance

Disclosure of the measures taken to reduce their environmental impact may be an opportunity for crypto companies and their investors to differentiate themselves. But effective communication and disclosure of these measures is necessary. For companies considering an IPO, certain disclosures would be required by the SEC's proposed climate rule, but, perhaps more importantly, the climate goals and actions taken can really affect the value of the company. Even if the company is not public, crypto mining companies representing approximately half of the bitcoin network's mining activity are choosing to voluntarily disclose information on bitcoin production or other mining activity, including information about their energy mix and consumption, according to the Blockchain Association. To provide quality climate reporting, companies will need to develop systems to reliably gather, process and report emissions data as well as other climate-related impacts on their businesses.

Gathering and reporting high-quality emissions data

Generally, greenhouse gas (GHG) emissions data comes from disparate sources such as utility invoices, meter readings and outsourced third parties, often making it more difficult than financial information to track. Additionally, the use of renewable energy and the purchase of renewable energy credits or offsets require assessment of the quality of the reductions to emissions. Under the SEC's proposed climate rule, public companies would be required to report their Scope 1 (direct GHG emissions) and Scope 2 emissions (indirect GHG emissions from purchased electricity or other acquired forms of energy). They would also be required to report Scope 3 emissions (GHG emissions from upstream and downstream activities) if they are material or included in emissions goals or targets.

As crypto organizations develop and implement their ESG reporting strategy, they should set up internal processes and controls to gather high-quality, highly comparable and timely emissions information that they can then report to regulators and/or investors. Companies can work with assurance providers to enhance the consistency and reliability of their reported data, both qualitative and quantitative.[13] When it comes to Scope 3 emissions, blockchain companies may have an advantage: with buy-in from suppliers, blockchain ledgers are a potential method to track disparate emissions data through the value chain.[14]

Measuring and reporting the financial impact of climate change

GHG emissions are only one facet of climate reporting. Increasingly, companies are expected to report on the impact of climate-related events on their operations. Under the SEC's proposal, subject to a 1% significance threshold, this would include disclosing the financial impact of climate events and transition activities, as well

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[11] KPMG LLP, "Crypto as an Asset Class: What Asset Managers Should Know Before Going Crypto," February 2022, https://info.kpmg.us/news-perspectives/advancing-the-profession/crypto-as-an-asset-class.html; KPMG LLP, "ESG as an Asset: SEC's Proposed Rules Mark an Inflection Point for Asset Managers," June 23, 2022, https://info.kpmg.us/news-perspectives/advancing-the-profession/sec-proposed-rules-esg-as-an-asset.html.

[12] Rob Kozlowski, "Sustainable ETFs, Open-End Funds Hit Record Highs in 2021," *Pensions & Investments*, February 10, 2022, https://www.pionline.com/esg/sustainable-etfs-open-end-funds-hit-record-highs-2021.

[13] KPMG LLP, "The Wild West of Renewables: What New Entrants to the Market Should Know," October 2021, https://info.kpmg.us/news-perspectives/advancing-the-profession/the-wild-west-of-renewables-what-new-entrants-to-the-market-should-know.html.

[14] KPMG LLP, "What Role Might Blockchain Technology Play?"

as any associated costs or expenditures, on the consolidated financial statements. Crypto companies that are private and therefore not subject to these regulations should still be thinking about their impact on climate change, and the impact of climate change on their operations. For example, for crypto companies that rely heavily on large data centers, a severe weather event has the potential to curtail operations.

Informing stakeholders of other climate-related factors

With investors craving a greater volume of ESG data and information, crypto companies that disclose additional climate-related information – such as governance and risk management, climate targets, and carbon offsets – may find themselves enjoying a competitive advantage over their peers. Under the SEC climate proposal, many of these disclosures would be required for public companies, but voluntary disclosure could demonstrate transparency and accountability to investors.

Keeping an eye on the international regulatory environment

While the SEC's climate proposal looms large in the U.S., crypto companies that operate or invest outside of the country need to stay apprised of international disclosure requirements, such as those in the E.U. or elsewhere. The EFRAG and the ISSB are beginning to define the future of ESG reporting on an international scale, and U.S. companies should take notice.

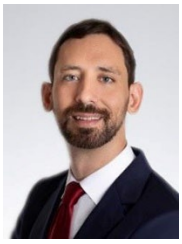
Board and audit committee considerations

The ESG journey requires engagement across any organization, including boards and other stakeholders, institutional investors, and other companies involved in or looking to enter the crypto arena. Directors must understand the firm's ESG approach, how it is integrated into strategy and the reporting of key metrics to best perform their oversight duties. Audit committees should be asking what areas the organization is measuring and why, what are the processes and controls over the data the organization reports, and what steps the organization is taking to provide transparent reporting.

Know before you go

A clear strategy around reporting on carbon emissions not only prepares crypto companies for climate regulations but also allows them to tell their ESG story to investors and other stakeholders in a compelling way that showcases the industry's emerging emissions reduction strategies.

Beyond environmental reporting, ESG also encompasses several top-of-mind areas for crypto companies, including cybersecurity risk; consumer protection; diversity, equity, and inclusion; and other social and governance reporting and assurance topics. Stay tuned for Part 2 of this article series, a deeper dive into crypto's top social and governance risks and opportunities.



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