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# Lawmakers and Regulators Examine Role of Blockchain Technology in Energy Transitions

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U.S. state and federal lawmakers, as well as federal regulators, are increasingly focusing on the role of blockchain and distributed ledger technology ("DLT") in ongoing efforts to combat climate change and to facilitate the transition from carbon-based fossil fuels.

Here are six key developments and players to keep an eye on, covering two broad categories:

- Initiatives targeting carbon emissions associated with data mining operations (items 1, 2 and aspects of items 3 and 4); and
- Efforts to enhance the integrity and transparency of energy markets and related digital assets (items 5, 6 and aspects of items 3 and 4).

1. On June 3, 2022, the New York legislature passed a bill to temporarily halt certain bitcoin and other cryptocurrency mining operations that run on carbon-based power sources. The bill sets a two-year moratorium during which the State would not issue new permits or approve renewals of existing permits for any electric generating facility that (a) utilizes a carbon-based fuel and (b) provides, in whole or in part, "behind-the-meter" electric energy consumed by cryptocurrency mining operations that use "proof-of-work" ("PoW") methods for validating blockchain transactions.[1] If the bill is signed into law by Governor Hochul, New York would become the first state in the country to ban new crypto mining infrastructure, potentially encouraging other states to follow its lead and driving an increasing share of mining networks to more crypto-friendly states such as Texas. Critics have warned that such bans not only harm the intended targets and their workers but may also discourage renewable energy-based mining operations due to concerns over "regulatory creep".

[1] Bitcoin and Ethereum, the two largest cryptocurrencies by market cap, currently rely on a "proof-of-work" model, whereby miners compete to solve complex math problems to verify transactions, requiring abundant energy to achieve the necessary computing power. Etherum is in the process of transitioning to a more efficient "proof-of-stake" authentication method, which would eliminate the competitive race and limit the environmental impact. Other technologies, such as side chains and so-called Layer 2 solutions, have been developed to help reduce energy consumption.

2. At the federal level, new legislation was proposed on June 7, 2022 by U.S. Senators Lummis and Gillibrand, which would take a more industry-friendly approach to cryptocurrency mining. The new legislation, dubbed the Responsible Financial Innovation Act, aims to "create a complete regulatory framework for digital assets." The legislation does not impose any limits on mining; rather, it requires the Federal Energy Regulatory Commission, in consultation with the Commodity Futures Trading Commission (the "CFTC"), to analyze various issues relating to the impact of cryptocurrency mining and staking operations on the energy markets and the environment and to submit an annual report to select Congressional committees. Issues to be analyzed in the report include: (a) energy consumption for mining and staking of digital asset transactions and the effect on energy prices and baseload power levels, (b) the use of renewable energy sources in connection with mining and staking; and (c) a process for regulated entities to make publicly available information regarding energy consumption.

3. Meanwhile, the Biden Administration is beginning to craft its own policies to reduce the emissions footprint of PoW-based cryptocurrencies. On March 9, 2022, President Biden signed an executive order calling on various executive branch departments and agencies to collaborate in researching a range of topics relating to DLT and sets timeframes for these agencies to report their findings and policy recommendations. In particular, the order instructs the White House's Office of Science and Technology Policy, in consultation with the Secretary of the Treasury and Secretary of Energy, among others, to examine and report on "the connections between [DLT] and energy transitions" and "the potential for these technologies to impede or advance efforts to tackle climate change," including the effect of cryptocurrencies' consensus mechanisms on energy usage, potential mitigating measures and alternative mechanisms of consensus. The order also instructs the Financial Stability Oversight Council (the "FSOC") to report on the risks to financial stability and regulatory gaps posed by digital assets and recommendations to address such risks. The report would build on the FSOC's prior recommendations to address climate-related financial risks, which were issued in October 2021 in response to a prior executive order.

4. With its seat on the FSOC, the CFTC is expected to play a leading role in responding to these initiatives. In March 2021, CFTC Chairman Rostin Behnam established a Climate Risk Unit within the agency that is tasked with addressing the climate implications of digital assets, in addition to its broader focus on the role of derivatives in pricing and addressing climate risk. Chairman Behnam has at times sounded a skeptical tone with respect to the role of digital assets in environmental sustainability, citing a "clear dislocation" between the energy consumption needed for mining operations and the economic output from digital assets. He has emphasized the need for transparency in digital asset markets, suggesting certain energy-related disclosures in connection with digital asset purchases as a mechanism for driving the industry to proof-of-stake models. While the CFTC's jurisdiction over the underlying "spot" (or "cash") markets is limited to exercising its antifraud and antimanipulation authority, Chairman Benham has cited "several unique elements" of digital asset cash markets (e.g., multitude of retail investors engaged in speculation, custody and cybersecurity issues) that distinguish it from other cash markets and suggest "it would benefit greatly from CFTC oversight." He has also called on Congress to expand the CFTC's power over cryptocurrency markets, noting that the agency's focus on market integrity through oversight of exchanges, clearinghouses and data repositories makes it "well situated to play an increasingly central role" in overseeing such markets.

5. On June 2, 2022, the CFTC issued a Request for Information ("RFI") seeking public comment on climate-related financial risk in both the derivatives markets and underlying commodities markets, with the aim of informing the agency's "next steps" to promote innovation, ensure financial integrity and avoid systemic risk.[2] Among other topics, the RFI solicits comment on the role of digital assets and DLT, including whether digital assets markets are creating climate-related financial risk, as well as any risk-mitigating benefits that these technologies may offer. The RFI also touches on the voluntary carbon market ("VCM"),[3] requesting comment on aspects of these markets that are susceptible to fraud or manipulation or merit enhanced CFTC oversight and any steps the CFTC should take to enhance integrity and foster transparency and liquidity in these markets, including the prospect of a registration framework for VCM participants. Although the RFI was approved by all five Commissioners, one, Summer Mersinger, expressed concerns that some of the questions (including those relating to DLT and VCM) extend beyond the scope of the CFTC's jurisdiction over underlying cash markets, warning in a concurring statement that "the RFI reflects either inadvertent 'mission creep' at best, or a power grab to expand the CFTC's authority at worst".

6. On the same day the RFI was issued, the CFTC's Energy and Environmental Markets Advisory Committee ("EEMAC") held a public meeting to discuss issues relating to the VCM, including the market structure for trading carbon offsets, efforts at product standardization and the proper role for the CFTC in these markets. Market participants cited a range of difficulties in scaling up these markets, including the need for data collection and transparency to ensure the quality and integrity of credits, the problem of "double counting," and concerns around market fragmentation. Several participants called on the CFTC to help resolve a "crisis of confusion" by establishing an overarching framework based on standardized pricing and a common set of attributes. In his remarks, Chairman Behnam noted an opportunity to build on lessons learned from cryptocurrency markets, where the CFTC has played a significant role in bringing cases despite its limited jurisdiction in the underlying crypto markets. Efforts are underway in the private sector to use DLT and smart contracts to address some of the issues highlighted above, including improving transparency and traceability of carbon credits through public and immutable data disclosure on the blockchain and facilitating efficient transfers and repairing market fragmentation by "tokenizing" carbon credits and then "retiring" the credits on the registry to prevent double spending.[4] It remains to be seen if the CFTC will leverage DLT or smart contracts in formulating its regulatory response to the concerns identified at the meeting.

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[2] Comments on the RFI are due on or before August 8, 2022.

[3] The VCM has come under scrutiny recently as a result of its rapid growth, with VCM trades topping $1 billion for the first time in 2021 and expected to reach $50 billion by 2030. Chairman Behnam has emphasized that voluntary carbon credits are commodities and that the CFTC's primary role is to identify and address fraud or manipulation in the underlying VCM. As key exchanges launch futures and other derivatives based on carbon offsets, the CFTC will examine whether a proper correlation exists between these derivatives markets and the underlying VCM cash markets.

[4] For instance, KlimaDAO, a Regenerative Finance (ReFi) project, uses certain decentralized finance technology to allow high-integrity carbon credits issued through Verra and Gold Standard registries, to be bridged onto the blockchain. The Toucan Bridge created by Toucan Protocol allows carbon credits to be linked to the blockchain, with users receiving project-specific TCO2 tokens that can then be transferred. The Regen Network, another ReFi project, is building an on-chain registry using a proof-of-stake protocol for verification of carbon claims.

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