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On September 16, 2022, the U.S. Department of the Treasury (Treasury), the Department of Justice (the DOJ), and other U.S. government agencies released eight highly anticipated reports¹⁰ (the Reports) on different aspects of digital asset regulation, setting forth the agencies' respective legislative, regulatory, and policy recommendations and priorities. The Reports were issued in response to White House Executive Order 14067 on Ensuring Responsible Development of Digital Assets (the Executive Order), which calls for a whole-of-government alignment of the federal government's approach to digital assets.

The Reports confirm the Biden-Harris Administration's acknowledgment that digital assets have potential benefits and are likely to remain a component of the U.S. financial system, but that the proliferation of the asset class presents unique risks that should be addressed. While the Reports provide some insight into the Administration's thinking about digital assets and articulate some recommendations and "calls to action," many significant regulatory questions remain unaddressed.

This post summarizes the White House Report reviewing the impact of digital assets on energy usage and the climate.

Climate and Energy Implications of Crypto-Assets in the United States

In this Report, the White House recognizes that digital assets require a significant amount of energy resources and may have harmful effects on the environment. At the same time, digital assets play an important role in climatemonitoring and -mitigating initiatives, potentially lowering their harmful effects with further development. The Office of Science and Technology Policy (OSTP) issued a Report addressing four questions posed by the Executive Order:

How do digital assets effect energy usage, including grid management and reliability, energy efficiency incentives and standards, and sources of energy supply?

The OSTP recognizes that digital assets may consume a significant amount of electricity, with crypto assets being a major culprit. For example, crypto assets in August 2022 used the equivalent of 0.4% to 0.9% of annual global electricity usage, comparable to the annual electricity usage of all non–crypto asset data centers in the world. As of

August 2022, two blockchains in particular, Ethereum^{III} and Bitcoin, account for the vast majority of electricity usage —60% to 77% and 20% to 39%, respectively. In turn, crypto-asset operations and mining may fluctuate, impacting consumers and energy infrastructure. In New York, crypto-asset mining increased annual household electric bills by \$82 and small-business electric bills by \$164. Crypto assets also continuously use power, which can affect power grids and diminish equipment.

However, the OSTP recognizes that energy usage varies substantially with different crypto assets. Proof-of-work blockchains use significantly more energy than proof-of-stage mechanisms. Such findings may promote and incentivize crypto-asset leaders to innovate and develop more energy-efficient mechanisms.

What is the scale of climate, energy, and environmental impacts of digital assets relative to other energy uses, and what innovations and policies are needed in the underlying data to enable robust comparisons?

Overall, crypto-asset activity in the United States results in carbon dioxide emissions of about 25 to 50 million metric tons per year. Certain regions, such as the Great Plains, that rely predominantly on coal power may use more carbon-intensive energy sources than others. In addition, crypto assets have other environmental effects, such as air and water pollution, noise pollution, and electronic waste. However, the OSTP recognizes that there are ways to motivate zero-emission operations. This may include contracting or constructing new clean electricity to power mining or using existing renewable electricity.

What are the potential uses of blockchain technology that could support climate-monitoring or mitigating technologies?

The OSTP recognizes that blockchain technologies can play a powerful role in various energy management, monitoring, and regulation frameworks. Specifically, the OSTP highlights the use of <u>distributed-ledger technologies</u> (DLT) and blockchain in these capacities. The OSTP states that DLT may play a role in enhancing environmental markets, although certain markets, such as highly centralized compliance markets, may not be as applicable. The OSTP does emphasize that DLT may play a more powerful role in organizing distributed-energy resources. For example, DLT could serve as a digital ledger for the registration, authentication, and participation of distributed-energy resources like electric vehicles, fuel cells, or solar-power systems. DLT could also decentralize and automate power infrastructures, such as an electricity grid, and increase security and reliability.

Ultimately, the use of blockchain technology and DLT may facilitate the development of new environmental and energy markets that could spur innovation. DLT could help create peer-to-peer energy microgrids that localize energy consumption and reduce system congestion.

What key policy decisions, critical innovations, research and development, and assessment tools are needed to minimize or mitigate the climate, energy, and environmental implications of digital assets? Ultimately, the OSTP provides six actions for consideration:

- The OSTP recommends that federal agencies work collaboratively to minimize greenhouse gas ("GHG") emissions, environmental justice impacts, and other local impacts from crypto assets. This may include creating new energy standards, including low water usage, low noise generation, or clean-energy usage. The OSTP also recommends the use of potential congressional legislation or executive actions to reduce impacts.
- The OSTP recommends ensuring energy reliability. This includes actions by the Department of Energy and various regional entities conducting reliability assessments of crypto-asset mining operations, and potentially developing reliability standards.
- The OSTP recommends obtaining data to understand, monitor, and mitigate impacts. This includes collaboration with federal agencies to collect and analyze more-accurate data—such as mining-energy usage, power purchase agreements, and other mandatory-response participation—to make decisions on implications of crypto assets.
- The OSTP recommends federal agencies and regulations to promulgate and regularly update energy conservation standards for crypto-asset operations.
- The OSTP recommends that the crypto-asset industry work with further transparency. This includes publicly reporting crypto-asset mining locations, annual electricity usage, GHG emissions, and electronic-waste-recycling performance.

The OSTP recommends further research to improve understanding and innovation. This includes using federal
agencies to promote and support research that improves the sustainability of digital assets. Additionally, further
research and development priorities could emphasize innovation in digital-asset technologies, such as reducing
environmental impacts and improving efficiencies.

Digital Assets & Blockchain Technology Group

Winston's cross-practice Digital Assets and Blockchain Technology Group provides accurate and efficient advice that helps clients navigate existing and developing legal challenges surrounding blockchain technologies. Our team draws upon experience from lawyers in our corporate, securities, tax, litigation, regulatory, and intellectual property practices, as well as others, to advise clients from startups and DAOs to the largest financial services firms in the world.

For more insights on the Reports, read our full briefing: The Future of Digital Assets Regulation in the United States.

The complete Reports mandated by President Biden's Executive Order and issued by Treasury, DOJ, and White House explored in this Winston Alert can be located at the following links:

- Action Plan to Address Illicit Financial Risks of Digital Assets issued by Treasury
- <u>Crypto-Assets: Implications for Consumers, Investors and Businesses</u> issued by Treasury
- The Future of Money and Payments issued by Treasury
- Climate and Energy Implications of Crypto-Assets in the United States issued by the White House
- Policy Objectives for a U.S. Central Bank Digital Currency System issued by the White House
- Technical Evaluation for a U.S. Central Bank Digital Currency System issued by the White House
- The Role of Law Enforcement in Directing, Investigating, and Prosecuting Criminal Activity Related to Digital Assets issued by the DOJ
- Responsible Advancement of US Competitiveness in Digital Assets issued by the U.S. Department of Commerce

The Ethereum Merge was executed on September 15, 2022, which completed Ethereum's transition from a proof-of-work to a proof-of-stake consensus.
The Ethereum Merge eliminated the need for energy-intensive mining and reduced energy consumption by approximately 99%.

6 Min Read

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