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CITY BAR

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Hon. Eric Adams  
Mayor of the City of New York  
City Hall  
New York, NY 10007

**Re: Mining and Use of Cryptocurrencies in New York City**

Dear Mayor Adams,

We write on behalf of the New York City Bar Association's Energy and Environmental Law Committees. These Committees are active groups of attorneys and law students interested in energy and environmental law and policy at the federal, state, and local level. The Committees' work includes researching and weighing in on important issues that have clear implications for energy or the environment. One of those issues is what the mining and use of cryptocurrencies in New York City means for the energy system and the environment.

Our focus here relates to the City's ongoing role in combating climate change and enabling a green economy by, among other things, implementing existing building decarbonization laws and strengthening the City's resilience to extreme weather. As you recently noted, "we are in the midst of a climate crisis."<sup>1</sup> To keep New York City at the forefront of vital efforts to address the

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<sup>1</sup> Press Release, N.Y.C. Office of the Mayor, Mayor Adams Announces Appointments of Climate Leadership Team, Streamlines Multiple City Environmental Agencies Into One (Jan. 31, 2022), <https://www1.nyc.gov/office-of-the->

**About the Association**

*The mission of the New York City Bar Association, which was founded in 1870 and has over 23,000 members, is to equip and mobilize a diverse legal profession to practice with excellence, promote reform of the law, and uphold the rule of law and access to justice in support of a fair society and the public interest in our community, our nation, and throughout the world.*

causes and effects of climate change, we urge you to ensure that the institutions and practices that will establish New York City as the “center of the cryptocurrency industry”<sup>2</sup> are developed on a sustainable foundation. This letter therefore focuses on the energy and environmental aspects of cryptocurrency, and proposes an environmental baseline for New York City’s engagement with cryptocurrency. We appreciate the potential benefits of cryptocurrency such as improving financial and tech literacy and attracting tech companies and investments to the City, but we encourage you to use New York’s sweeping legislative commitment to decarbonization as a framework for your administration’s engagement with cryptocurrency.

Mining and transacting in many cryptocurrencies is an energy-intensive, high-emissions operation. Consider Bitcoin, arguably the flagship of cryptocurrencies: some studies show that a single Bitcoin transaction uses as much as 2203.05 kWh, equivalent to the power consumption of an average U.S. household over 75.51 days.<sup>3</sup> To put that in perspective, Bitcoin mining consumes as much energy and pumps out as much greenhouse gases as entire nations.<sup>4</sup> And Bitcoin is just one of thousands of currencies whose mining, by design, consumes large amounts of energy, which in turn yields harmful emissions. Currently, non-renewable fuels comprise nearly 61% of the power used by crypto mining facilities.<sup>5</sup> And that percentage seems poised to rise, as the energy demand for crypto mining is leading to efforts to resurrect mothballed fossil fuel-burning power plants and industrial facilities in New York State.<sup>6</sup> This is a step backward, away from the State’s mission to phase out fossil fuel use and reduce greenhouse gas emissions.

Some have suggested that renewables and energy credits could be used to make crypto mining more sustainable. However, to the knowledge of our members, businesses developing and operating mining facilities seek the least expensive power sources and have scant interest in renewable technologies—unless these can be provided on a 24/7 basis and offer the most favorable prices. Furthermore, although some crypto mining facilities in New York run on hydroelectric power, this diverts those renewable energy resources from serving other sources of demand for power. This, in turn, causes greenhouse gas-emitting resources to ramp up when they otherwise would not have done so. In addition to its contributions to emissions, crypto’s energy consumption is also likely to increase energy *costs*—not only for crypto users but for all energy consumers, regardless of whether they use cryptocurrencies. In short, as it currently stands, increased use of

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[mayor/news/053-22/mayor-adams-appointments-climate-leadership-team-streamlines-multiple-city#/0](#). (All websites last visited July 15, 2022.)

<sup>2</sup> *New York Mayor Adams to Receive First Paycheck in Cryptocurrency*, REUTERS (Jan. 20, 2022), <https://www.reuters.com/world/us/nyc-mayor-eric-adams-receive-first-paycheck-cryptocurrency-via-coinbase-2022-01-20/>.

<sup>3</sup> While estimates for the energy consumption of a single transaction vary, we have included these figures from the estimates available from digiconomist.net as of February 10, 2022. See <https://digiconomist.net/bitcoin-energy-consumption/>.

<sup>4</sup> Current estimates show Bitcoin’s electricity consumption to be on par with countries like Thailand and its carbon footprint to be akin to that of Kuwait. <https://digiconomist.net/bitcoin-energy-consumption#assumptions>

<sup>5</sup> Apoline Blandin et al., 3rd Global Cryptoasset Benchmarking Study (Cambridge Centre for Alternative Finance, September 2020), <https://www.jbs.cam.ac.uk/wp-content/uploads/2021/01/2021-ccaf-3rd-global-cryptoasset-benchmarking-study.pdf>.

<sup>6</sup> Corey Kilgannon, *A Bitcoin Boom Fueled by Cheap Power, Empty Plants and Few Rules*, N.Y. TIMES (Dec. 6, 2021), <https://www.nytimes.com/2021/12/05/nyregion/bitcoin-mining-upstate-new-york.html>.

crypto seems likely to work against the City’s goals for affordability and climate policy, including the goal to achieve carbon neutrality by 2050.<sup>7</sup>

Apart from energy consumption and costs, crypto mining also has negative impacts on the water and air resources and the communities that rely on them. For example, crypto miners use local cold waterways to cool their computing systems and then discharge that same water back at temperatures as high as 98 degrees Fahrenheit (and higher). This warmed water not only kills fish directly but also promotes algal blooms which deprive aquatic life of oxygen, harming ecosystems already stressed by a changing climate. As for air pollution, fossil fuel-burning power plants supporting crypto mining release local air pollutants such as particulate matter and nitrous oxides that threaten air quality in downwind communities. These pollutants are linked to negative health impacts including cardiovascular and respiratory diseases, and disproportionately harm Black and brown communities.<sup>8</sup>

We recognize that ambitions for cryptocurrency in New York City involve more than mining, and that relatively high energy prices here make it an unlikely place for extensive mining operations. But this does not wholly decouple crypto activities in the city from the mining activities that enable them. We also understand that some alternatives to Bitcoin use a proof-of-stake approach that consumes far less energy than the proof-of-work approach employed by Bitcoin.<sup>9</sup> However, these alternatives are far less popular than Bitcoin.<sup>10</sup> Ethereum, another highly popular cryptocurrency, has said that it *aims* to transition to a proof-of-stake approach.<sup>11</sup> However, Ethereum first announced that aim before the start of the Trump Administration and has yet to fully migrate from a proof-of-work approach.<sup>12</sup>

We urge your administration to consider the numerous environmental, social, and health impacts associated with cryptocurrency mining as you craft your policy agenda.<sup>13</sup> And, with those impacts in mind, we ask that your administration commit to the following measures:

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<sup>7</sup> See ONENYC 2050, <https://onenyc.cityofnewyork.us/>.

<sup>8</sup> For example, the Black and Hispanic population in New York have total asthma death rates of 28.4 and 21.3 deaths per 1 million people in 2018, respectively, compared to a rate of 7.5 per 1 million for the White population. *Asthma Dashboard - State Level*, N.Y. DEPT. OF HEALTH, [https://webbi1.health.ny.gov/SASStoredProcess/guest?\\_program=%2FEBI%2FPHIG%2Fapps%2Fasthma\\_dashboard%2Fad\\_dashboard&p=tbl&ind\\_id=ad23](https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=%2FEBI%2FPHIG%2Fapps%2Fasthma_dashboard%2Fad_dashboard&p=tbl&ind_id=ad23).

<sup>9</sup> See European Union Blockchain Observatory & Forum, *Energy Efficiency of Blockchain Technologies 25* (2021), [https://www.eublockchainforum.eu/sites/default/files/reports/Energy%20Efficiency%20of%20Blockchain%20Technologies\\_1.pdf#page=26](https://www.eublockchainforum.eu/sites/default/files/reports/Energy%20Efficiency%20of%20Blockchain%20Technologies_1.pdf#page=26).

<sup>10</sup> James Royal, *12 most popular types of cryptocurrency*, Bankrate (Mar. 10, 2022), <https://www.bankrate.com/investing/types-of-cryptocurrency/amp/> (listed as second largest by market capitalization, “the second name you’re most likely to recognize in the crypto space”).

<sup>11</sup> Ethereum, *Proof-of-Stake*, <https://ethereum.org/en/developers/docs/consensus-mechanisms/pos/>.

<sup>12</sup> Ethereum, *Ethereum Energy Consumption*, <https://ethereum.org/en/energy-consumption/>; see also Alex de Vries et al., *Revisiting Bitcoin’s Carbon Footprint*, 6 *JOULE* 1, 4 (2022), <https://doi.org/10.1016/j.joule.2022.02.005>.

<sup>13</sup> We understand that you have expressed concern about mining, and ask that you evaluate it further as discussed in this letter. E.g., Ariel Zilber, *Pro-cryptocurrency Eric Adams comes out against crypto mining*, N.Y. Post (Feb. 9, 2022), <https://nypost.com/2022/02/09/nyc-mayor-eric-adams-says-hes-against-crypto-mining/>.

- Ensure that cryptocurrency growth and use are consistent with the mandates and goals of the City’s climate change laws and policies.
- Support a requirement that the power consumption of facilities engaged in crypto mining be matched by renewable energy generation developed or financed by the facility owners/financiers, including with sufficient storage capacity to power the crypto mining hardware at all times.<sup>14</sup>
- Advocate for blockchains that use a less energy-intensive proof-of-stake method for validation or subsequent improved methods rather than the more energy-consuming proof-of-work validation.

It is essential that we take steps to ensure that any cryptocurrency activity, and mining especially, works to advance rather than hinder New York’s ongoing efforts to mitigate climate change. The City is at an important crossroads where it can use its power as a consumer, investor, and financial capital to become a leading advocate and center for green cryptocurrency. If enacted, the legislation establishing a State-level moratorium on cryptocurrency mining operations that use a proof-of-work method for authentication would provide a two-year window in which the State can evaluate its options, and the City similarly could use this time to focus on and prioritize these important energy and environmental concerns.<sup>15</sup> Your voice and leadership on this issue are extremely important, and we hope that this letter begins a productive dialogue about how to identify more climate-, environment-, and community-friendly ways for the City to thrive.

Respectfully,

Bethany Davis Noll, Co-Chair  
Environmental Law Committee

Justin Gundlach, Co-Chair  
Elizabeth Stein, Co-Chair  
Energy Committee

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<sup>14</sup> We are not aware of existing such requirements, but other industries that rely on energy-intensive data centers have committed to converting to clean energy. For example, in 2020, Google announced plans for its data centers to reach 24/7 carbon-free energy by 2030. See Urs Hölzle, *Announcing ‘Round-the-Clock Clean Energy for Cloud*, INSIDE GOOGLE CLOUD (Sept. 14, 2020), <https://cloud.google.com/blog/topics/inside-google-cloud/announcing-round-the-clock-clean-energy-for-cloud>; Google, *24/7 by 2030: Realizing a Carbon-free Future* (Sept. 2020), <https://www.gstatic.com/gumdrop/sustainability/247-carbon-free-energy.pdf>. In theory, the use of excess renewable power from existing sources could be satisfactory. Use of such sources when they would otherwise be underutilized can be a net benefit to the grid and to renewable economics because it can avoid curtailment (reduction in the output of a renewable energy source). However, use of excess renewable power would have to be paired with mechanisms to prevent mining facilities from using energy in instances where doing so would—directly or indirectly—cause a fossil fuel-fired plant to spark up instead of lying dormant. See Chris Helman, *‘Green Bitcoin Mining’: The Big Profits In Clean Crypto*, FORTUNE (Aug. 2, 2021), <https://www.forbes.com/sites/christopherhelman/2021/08/02/green-bitcoin-mining-the-big-profits-in-clean-crypto/> (describing plans for bitcoin miners in Texas to “buy up excess energy” from new wind and solar projects “then shut down their mining rigs when demand surges, releasing power back onto the grid”).

<sup>15</sup> As of this writing, that moratorium bill, AB A7389C, has passed both the Senate and Assembly and awaits the Governor’s signature; it becomes effective upon enactment. AB A7389C §§ 2, 7. It is not the purpose of this letter to express a position on the bill; rather, we are pointing out the benefits that would flow from the Governor’s decision to sign the bill into law.

Cc:

Hon. Adrienne E. Adams, Speaker, NYC Council

Hon. Amanda Farías, Chair, NYC Council Committee on Economic Development

Hon. James F. Gennaro, Chair, NYC Council Committee on Environmental Protection

Lorraine Grillo, First Deputy Mayor

Hon. Jennifer Gutiérrez, Chair, NYC Council Committee on Technology

Meera Joshi, Deputy Mayor for Operations

Brendan McGuire, Chief Counsel to the Mayor

Maria Torres-Springer, Deputy Mayor for Economic & Workforce Development

*\*The Environmental Law Committee thanks Committee members Rebecca Bratspies, Ramya Ravishankar, and Michael Wong for their work on this letter. The Energy Law Committee thanks Committee members Peter Funk and Geoffrey Heffernan for their work on this letter.*

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