

**ASSEMBLY STANDING COMMITTEE ON ENVIRONMENTAL
CONSERVATION**

ASSEMBLY STANDING COMMITTEE ON ENERGY

**ASSEMBLY STANDING COMMITTEE ON SCIENCE AND
TECHNOLOGY**

ASSEMBLY CLIMATE CHANGE WORK GROUP

**Cryptocurrency Mining and the Climate Leadership and
Community Protection Act (CLCPA)**

**Testimony of the New York State Department of Environmental
Conservation**

October 27, 2021

Chairman Englebright, Chairman Cusick, Chairman Otis, and members of the Committees on Environmental Conservation, Energy, Science and Technology, and the Assembly Climate Change Work Group: thank you for the opportunity to provide the following written testimony regarding the potential climate change impacts from cryptocurrency mining occurring in New York State.

The evolution and widespread adoption of industrial cryptocurrency mining has significant implications for the State's environment and energy grid. In particular, DEC recognizes that the unrestricted growth of the industry could complicate the State's ability to reduce greenhouse gas (GHG) emissions in accordance with the requirements of the Climate Leadership and Community Protection Act (CLCPA).

In 2019, New York State set a nation-leading precedent by enacting the CLCPA, the nation's most ambitious climate legislation. Our commitment to responsibly anticipate and achieve the CLCPA's emission reduction goals requires consideration of the environmental impacts and energy use of all sectors and industries. DEC is working with our agency counterparts to build context around the cryptocurrency mining industry and understand the potential environmental, energy, and economic impacts. DEC recognizes that it is critical to consider our next steps on cryptocurrency mining in the broader context of the CLCPA and how it will impact our ability to meet our emission reduction requirements and clean energy goals.

Cryptocurrency is decentralized by design. There are many types of cryptocurrencies, and several different methods of cryptocurrency authentication. Of the known methods, Proof of Stake (PoS) and Proof of Work (PoW) have surfaced as opposite sides of the energy intensity debate, showcasing the significant differences between the amount of energy used. To fully understand this complex issue, multiple factors need to be evaluated, ranging from equipment usage at scale to the overall impacts on energy usage of either method. More study is needed to evaluate the full ramifications of these protocols and how these and others may evolve and change over time. New York State is at a vital point in its energy transition, and significant growth of this type of energy intensive industry will create additional pressures on the ability to meet the ambitious and necessary requirements of the CLCPA.

Cryptocurrency mining is characterized by many unique examples of facilities and energy procurement strategies across the United States. Facilities like power plants, aluminum smelters, paper mills, factories and airplane hangars have been repurposed to house the hardware. There are also many examples of new, custom facilities or data centers. Energy costs are a vital component of the economics of cryptocurrency mining. Places like New York and Washington State, with robust hydroelectric power, offer attractive energy pricing and the cryptocurrency mining industry has taken advantage of that. Concerns arise about using so much of that public power for private benefit when so many other longstanding industries need to electrify over such a short period of time.

In New York State, state agency policy efforts that have guided the transition to more efficient, renewable energy have resulted in the closure of all coal and some older natural gas power plants. Recently, cryptocurrency mining companies began to purchase these facilities to

vertically integrate their energy intensive operations. The typical around-the-clock operation of these mining facilities can result in substantially greater emissions than when the same facilities were being used for electricity generation only.

For cryptocurrency mining operations that utilize energy from the State's electric grid and do not otherwise impact the environment, DEC has limited jurisdiction. However, operations utilizing grid-based electricity for mining, even if only renewable energy, should not be exempt from scrutiny. When these facilities are using grid-based electricity, they add to the state's total electricity load, requiring more renewable energy development to meet the state's 70% by 2030 renewable electricity and 100% by 2040 clean electricity requirements.

Other factors that have important local and state-wide implications include job creation and volatility of the industry. Compared to other energy intensive industries, or conventional data center operations, cryptocurrency mining has relatively low permanent job creation rates. The volatile nature of cryptocurrency valuations can lead to surging growth when valuations are high and devastating impacts when those valuations crash. This was witnessed in other parts of the country over the span of just two years between 2017 and 2018.

DEC is responsible for permitting industrial operations with direct emissions or other direct environmental impacts, including power plants converted to cryptocurrency mining, which include air, water withdrawals and discharges, and other permits specific to the operations of a facility. In regard to climate change impacts, section 7(2) of the CLCPA requires DEC and other permitting agencies to determine whether permits or licenses are inconsistent with or would interfere with the Statewide GHG emission limits. If so, DEC will require the permit applicant (e.g. cryptocurrency mining operators) to provide a detailed statement of justification as to why such limits or criteria may not be met and identify alternatives or GHG mitigation measures to be required. An example is the ongoing permit renewal process for the Greenidge plant.

Because that application is pending, we cannot provide additional details beyond the procedural background. Greenidge's Air Title V and Title IV (Acid Rain) permits were issued on September 7, 2016 and expired on September 6, 2021. Because the operator timely submitted an application for renewal of that permit, by operation of law the facility may operate under the terms of its existing permit while DEC considers the renewal application.

After Greenidge Generation applied to renew these required air permits, DEC conducted a rigorous review of application materials and requested additional information. On September 1, following requests by DEC for information from Greenidge regarding consistency with the CLCPA, DEC determined that draft renewal Title IV (Acid Rain) and Title V air permits for Greenidge Generation were ready to be issued for public review and comment. While sufficient information was submitted to begin the required public review, DEC stated that the applicant had not demonstrated sufficient compliance with the requirements of the CLCPA, and that DEC had not made a final determination as to whether the facility would be inconsistent with or would interfere with the attainment of the Statewide GHG emission limits. DEC also indicated that the applicant had not provided a justification for the Facility nor proposed sufficient alternatives or GHG mitigation measures.

DEC released the draft permits for public comment on September 8 and held virtual Public Comment Hearings at 1 p.m. and 6 p.m. on October 13, 2021. DEC encourages interested members of the public to submit comments on the draft permits by the November 19, 2021 deadline. DEC specifically asked the public to submit comments on the facility's compliance with the CLCPA, including: (1) whether the Facility would be inconsistent with or would interfere with the attainment of the Statewide GHG emission limits; (2) the potential need or justification for the Facility; and (3) appropriate alternatives or GHG mitigation measures to be required.

DEC has not made a determination regarding the final issuance of permits to Greenidge Generation. Before making any final decisions on the draft permits, DEC will thoroughly review all comments received and any additional information submitted by the applicant.

Outside the context of individual permits, decisions about regulatory actions to take with regard to cryptocurrency mining will require more research to better understand the risks to local communities, the environment, the energy grid, and how the expansion of these operations may impact New York's ability to meet CLCPA goals and requirements. DEC is committed to thoroughly reviewing the potential implications of cryptocurrency and working with other agencies to determine the appropriate path forward to ensure environmental protections and consistency with climate goals.

We thank you for the opportunity to provide this testimony today and look forward to working with you as our evaluation of this industry progresses.