

December 21, 2022

VIA ELECTRONIC SUBMISSION

U.S. Department of Energy
U.S. Energy Information Administration
Agency Information Collection Extension
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<https://www.reginfo.gov/public/do/PRAMain>

**Re: Comments on Forms EIA-860, EIA-860M, EIA-861, EIA-861S, EIA-861M,
and EIA-923, Electric Power & Renewable Electricity Surveys, OMB
Control Number 1905-0129**

Dear Paul McArdle,

The 20 undersigned organizations and individuals respectfully submit these comments to the U.S. Energy Information Administration (EIA) regarding Forms EIA-860, EIA-860M, EIA-861, EIA-861S, EIA-861M, and EIA-923, Electric Power & Renewable Electricity Surveys, OMB Control Number 1905-0129, which was noticed in the Federal Register, Vol. 87, No. 223 on Monday, November 21, 2022.

Crypto-asset mining is an extremely energy-intensive process that threatens the ability of the United States to reduce our dependence on climate-warming fossil fuels. Crypto-asset mining operations also harm local communities, including by increasing local pollution and impacting electricity rates and delivery, as well as several other negative environmental impacts. Many recent reports, including from the White House Office of Science and Technology Policy (OSTP),¹ have detailed the energy intensity of crypto-asset mining operations and observed how little data exists on their energy consumption and impacts on the energy system in the United

¹ See, e.g., White House Office of Science and Technology Policy, *Climate and Energy Implications of Crypto-Assets in The United States*, (Sept. 2022), <https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Crypto-Assets-and-Climate-Report.pdf> (“OSTP Report”); DeRoche, M., Fisher, J., Thorpe, N., & Wachspress, M., *The Energy Bomb: How Proof-of-Work Cryptocurrency Mining Worsens the Climate Crisis and Harms Communities Now*, Earthjustice & Sierra Club (Sept. 2022), https://earthjustice.org/sites/default/files/files/energy_bomb_bitcoin_white_paper_101322.pdf; Alex De Vries *et al.*, *Revisiting Bitcoin’s carbon footprint*, 6(3) Joule 498 (Feb. 25, 2022), [https://www.cell.com/joule/fulltext/S2542-4351\(22\)00086-1](https://www.cell.com/joule/fulltext/S2542-4351(22)00086-1); Alex De Vries, *Bitcoin’s energy consumption is underestimated: A market dynamics approach*, Energy Res. Soc. Sci. 70, 101721 (Dec. 2020), <https://doi.org/10.1016/j.erss.2020.101721>; Alex De Vries, *Renewable Energy Will Not Solve Bitcoin’s Sustainability Problem*, 3(4) Joule 893 (Apr. 2019), <https://www.sciencedirect.com/science/article/pii/S254243511930087X>; Severin Borenstein, *Crypto Mining for a More Stable Grid?* Energy Inst. at Haas (Mar. 21, 2022), <https://energyathaas.wordpress.com/2022/03/21/crypto-mining-for-a-more-stable-grid/>; Laura Counts, *Power-hungry cryptocurrency miners push up electricity costs for locals*, Berkeley Haas (Aug. 3, 2021), <https://newsroom.haas.berkeley.edu/research/power-hungry-cryptominers-push-up-electricity-costs-for-locals/>; Cambridge Centre for Alt. Finance, *Cambridge Bitcoin Electricity Consumption Index*, <https://ccaf.io/cbeci/index>; Fitch Ratings, *Crypto Mining Poses Challenges to Public Power Utilities* (Jan. 24, 2022), <https://www.fitchratings.com/research/us-public-finance/crypto-mining-poses-challenges-to-public-power-utilities-24-01-2022>; Electric Reliability Council of Texas, Inc. (ERCOT), *Large Flexible Load Task Force. Overview of Large Load Interconnection Requests (Interim Process)*, at 2 (Apr. 26, 2022), https://www.ercot.com/files/docs/2022/04/25/InterimLargeLoadInterconnectionProcess_AggregateData_04262022.pptx.

States. Indeed, the OSTP recommended that “[t]he Energy Information Administration and other federal agencies should consider collecting and analyzing information from crypto-asset miners and electric utilities in a privacy-preserving manner to enable evidence-based decisions on the energy and climate implications of crypto-assets.”²

For these reasons, similar to EIA’s proposal to add battery storage questions to the various forms comprising the Electric Power & Renewable Electricity Surveys (EPRES), we respectfully request that EIA add questions related to proof-of-work crypto-asset mining both at the generator-level for crypto mining operations that are located behind-the-meter at fossil fuel-powered or renewable generators as well as at the utility-level for those utilities delivering electricity to data centers.

More specifically, we encourage EIA to amend EPRES questions as follows:

- **In Form EIA-860:** Add a survey question in Schedule 3, Part B following the net metering question (2021 question 32) that requires generators to disclose if they have a direct-serve or behind-the-meter customer, and if so, how much DC capacity is part of the agreement. Ask respondents to identify, in comments, if direct-serve customers have curtailable load agreements, and if so, for how much DC capacity.
- **In EIA-860M:** Add a survey question in Schedule 2 of EIA-860M following the proposed net metering relationship question (line 3) that requires generators to disclose if they have a direct-serve or behind-the-meter customer, and if so, how much DC capacity is part of the agreement. Ask respondents to identify, in comments, if direct-serve customers have curtailable load agreements, and if so, for how much DC capacity.
- **In Forms EIA-861, EIA-861S, and EIA-861M:** Add a field to the survey that identifies “Data Center” as its own customer class, instead of just Residential, Commercial, Industrial, and Transportation. This is relevant for Schedules 4, 6, and 7 of EIA-861, Schedule 6 of EIA-861S, and Schedules 2 and 3 of EIA-861M. This would include information about Data Center customers’ participation in demand response programs. In the alternative, add a schedule 6E, counterpart to energy efficiency, demand response, and advanced metering, that asks respondents to identify energy (MWh), capacity (MW), and curtailable capacity (MW) dedicated to data center customers, irrespective of identified service class.
- **In Form EIA-923:**
 - In Schedule 6, Question 5, specify that direct use includes behind-the-meter or direct-serve data center operations.
 - Add a Schedule 6 survey Question 5b that asks all other plants (i.e., non-industrial or commercial sector plants) to report the same elements as reported in 5, including behind-the-meter or direct-serve data centers.
 - Add survey questions to Schedule 6 that ask respondents to identify the date and type of contract agreements related to such direct uses of

² OSTP Report at 8.

electricity. Such questions could take a parallel structure to those in Schedule 2, Part A of the same form where respondents disclose information about fuel contracts.

By making these changes, EIA will collect data that is crucial for both federal and state regulators, grid operators, and the public as each seek to understand the growing and ever-changing impacts of proof-of-work crypto-asset mining operations on the U.S. energy system. For this reason, EIA should not only make these changes to the forms, but also publish the resultant information in its public datasets as frequently as possible. We explain above how to incorporate changes into the monthly versions of Forms EIA-860 and EIA-861; these survey changes should be reflected in EIA's monthly data releases. As monthly EIA-923 data is released throughout the year, we urge EIA to include Schedules 6 and 7 in addition to Schedules 2-5 in such releases to ensure that the public has access to the information included in those sections of the survey in a timely manner.

We previously submitted comments to EIA, on Form EIA-846, Manufacturing Energy Consumption Survey (MECS), OMB Control Number 1905-0169, which was noticed in the Federal Register, Vol. 87, No. 204, on Monday, October 24, 2022. In those comments, we offered that EIA should require proof-of-work crypto-asset mining companies to respond to Form EIA-846, because of the significant amount of energy used by these operations is akin to the level of electricity used by manufacturing entities. Indeed, crypto-asset miners are manufacturing digital assets.³

These amendments to both MECS and EPRES are a necessary first step to gather data from this opaque industry where “there are few, if any, reporting standards, and there is little or no formal tracking of mining operations.”⁴ The OSTP further offered that “the ability for crypto-asset electricity usage to grow rapidly . . . demonstrate[s] the need to obtain data to understand and monitor electricity usage from crypto-assets.”⁵ These changes to the EIA forms, along with additional changes that EIA finds necessary, would assist federal and state regulators, grid operators, and the public to monitor this energy-intensive and rapidly changing industry.

We also recommend that the EIA should further collaborate with the Lawrence Berkeley National Laboratory's Center of Expertise for Energy Efficiency in Data Centers to determine further data collection and information sharing mechanisms.

³ For convenience, our comments to EIA, on Form EIA-846, are attached as Attachment A. We offered that EIA should expand the companies required to respond to Form EIA-846, not only for companies under NAICS codes 31-33, but also to companies under NAICS Code 51 and specifically corporations under the NAICS Code 518210, which now covers “virtual currency (cryptocurrency) mining.” See NAICS Assoc., *518210 - Data Processing, Hosting, and Related Services*, <https://www.naics.com/naics-code-description/?code=518210&v=2022>.

⁴ Earthjustice & Sierra Club, *The Energy Bomb: How Proof-of-Work Cryptocurrency Mining Worsens the Climate Crisis and Harms Communities Now* at 2, 8-9.

⁵ OSTP Report at 19.

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We look forward to engaging with EIA to begin to collect this data. Thank you for the opportunity to comment on Forms EIA-860, EIA-860M, EIA-861, EIA-861S, EIA-861M, and EIA-923, Electric Power & Renewable Electricity Surveys, OMB Control Number 1905-0129.

Respectfully submitted,

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Alliance for a Green Economy

Clean Air Coalition of WNY

**Climate Reality Finger Lakes Greater Region
NY Chapter**

Committee to Preserve the Finger Lakes

**Concerned Citizens of Cook County
(Georgia)**

Concerned Citizens of Navarro County

Dr. Daniel L. Lau

Environmental Working Group

Fossil Free Tompkins

FracTracker Alliance

Gas Free Seneca

Grassroots Environmental Education

Greenpeace USA

Nassau Hiking & Outdoor Club

Responsible Growth * NE Washington

**Seneca Lake Guardian, A Waterkeeper
Alliance Affiliate**

South Shore Audubon Society

Sustainable Finger Lakes

Attachment A

Earthjustice, Environmental Working
Group, and Greenpeace, Comments
regarding Form EIA-846, Manufacturing
Energy Consumption Survey (MECS),
OMB Control Number 1905-0169
(Nov. 28. 2022)

November 28, 2022

VIA EMAIL

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U.S. Energy Information Administration
Agency Information Collection Extension
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Re: Comments on Form EIA-846, Manufacturing Energy Consumption Survey (MECS), OMB Control Number 1905-0169

Earthjustice, Environmental Working Group, and Greenpeace respectfully submit these comments regarding Form EIA-846, Manufacturing Energy Consumption Survey (MECS), OMB Control Number 1905-0169, which was noticed in the Federal Register, Vol. 87, No. 204 on Monday, October 24, 2022.

We request that Form EIA-846 not only be issued to companies under NAICS codes 31-33, but also to companies under NAICS Code 51 and specifically corporations under the NAICS Code 518210, which now covers “virtual currency (cryptocurrency) mining,”¹ because of the significant amount of energy used by these operations² is akin to the level of electricity used by manufacturing entities. Indeed, cryptocurrency miners are manufacturing digital assets.

It is imperative that such energy-intensive cryptocurrency miners also submit data on energy consumption,³ energy expenditures, building characteristics,⁴ participation in energy management programs, and emerging technologies. For example, additional questions in the Energy Management Activities section starting on page 55 could include questions about mining energy efficiency efforts (what efforts are being made to purchase more-efficient ASICs) or plans to change validation methods.⁵

Such information would be a good first step to gather data from this opaque industry where “there are few, if any, reporting standards, and there is little or no formal tracking of

¹ NAICS Assoc., *518210 - Data Processing, Hosting, and Related Services*, <https://www.naics.com/naics-code-description/?code=518210&v=2022>.

² See, e.g., White House Office of Science and Technology Policy, *Climate And Energy Implications of Crypto-Assets in The United States* (Sept. 2022), <https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Crypto-Assets-and-Climate-Report.pdf>; DeRoche, M., Fisher, J., Thorpe, N., & Wachspress, M., *The Energy Bomb: How Proof-of-Work Cryptocurrency Mining Worsens the Climate Crisis and Harms Communities Now*, Earthjustice & Sierra Club (Sept. 2022), https://earthjustice.org/sites/default/files/files/energy_bomb_bitcoin_white_paper_101322.pdf.

³ For example, all questions about “Estimated End-Use Percent Consumption” such as questions 19, 32, 69, and 77.

⁴ We recommend that the definition of buildings be changed so that the warehousing and/or containers that house the cryptocurrency mining equipment be included.

⁵ See, e.g., IEA, *Efficiency Of Bitcoin Mining Hardware* (Last updated 26 Oct 2022) <https://www.iea.org/data-and-statistics/charts/efficiency-of-bitcoin-mining-hardware>; Bybit Learn, *19 Best ASIC Miners to Use for ASIC Crypto Mining* (Aug 10, 2022) <https://learn.bybit.com/crypto/best-asic-miners/>.

mining operations.”⁶ Because of this, the White House Office of Science and Technology Policy recently recommended that “[t]he Energy Information Administration and other federal agencies should consider collecting and analyzing information from crypto-asset miners and electric utilities in a privacy-preserving manner to enable evidence-based decisions on the energy and climate implications of cryptoassets.”⁷

In fact, if energy-intensive cryptocurrency miners were required to report on Form 846, this would help immensely with the lack of data and we would hope that data at be made public. Also if, energy-intensive cryptocurrency miners were required to report on Form 846 we would hope the reporting would be biennially rather than quadrennially because the large scale of the industry is so new in the Unites States and changes so quickly.

We look forward to engaging with other EIA forms to begin to collect this data as well. Thank you for the opportunity to comment on Form EIA-846, Manufacturing Energy Consumption Survey (MECS).

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Scott Faber
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Charlie Cray
Greenpeace USA

⁶ DeRoche, M., Fisher, J., Thorpe, N., & Wachspress, M., *The Energy Bomb: How Proof-of-Work Cryptocurrency Mining Worsens the Climate Crisis and Harms Communities Now* at 2, 8-9, Earthjustice & Sierra Club (Sept. 2022), https://earthjustice.org/sites/default/files/files/energy_bomb_bitcoin_white_paper_101322.pdf.

⁷ White House Office of Science and Technology Policy, *Climate And Energy Implications of Crypto-Assets in The United States*, at 8 (Sept. 2022), <https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Crypto-Assets-and-Climate-Report.pdf>.