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June 25, 2020

Office of Electricity  
U.S. Department of Energy  
[Electricity.Exports@hq.doe.gov](mailto:Electricity.Exports@hq.doe.gov)

OE Docket No. EA-482  
DMG Blockchain Solutions Inc. Application To Export Electric Energy

### **Motion to Intervene and Comment of Public Citizen, Inc.**

Public Citizen moves to intervene and comment on the January 29, 2020 application of DMG Blockchain Solutions Inc. (DMG) to export electricity from the United States to Canada.<sup>1</sup> DMG is a Canadian cryptocurrency mining company that, according to its application, operates a business that “requires large amounts of power ...[and projects even] larger amounts in the future.”<sup>2</sup> Despite cryptocurrency mining’s status as a relatively immature industry, its alarming power consumption footprint raises concerns about its sustainability and suitability in localized power markets, resulting in moratoria on new cryptocurrency mining operations issued by select U.S. utility districts and government agencies.

Section 202(e) of the Federal Power Act requires that applications to export electricity should neither “impair the sufficiency of electric supply within the United States” nor “impede the coordination in the public interest of facilities subject to the jurisdiction of the Commission.”<sup>3</sup> Cryptocurrency mining is extraordinarily energy-

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<sup>1</sup> [www.energy.gov/sites/prod/files/2020/06/f75/DMG%20Blockchain%20Solutions%20%28CN%29%20Application.pdf](http://www.energy.gov/sites/prod/files/2020/06/f75/DMG%20Blockchain%20Solutions%20%28CN%29%20Application.pdf)

<sup>2</sup> DMG Application at 1.

<sup>3</sup> 16 U.S.C. § 824a(e).

intensive and can lead to major strains on local U.S. power supplies. At the same time, the process of mining is designed in a manner that wastes the overwhelming majority of the energy it consumes. U.S. cryptocurrency miners are struggling to meet their own power demands. This appears to be the first-ever application to export power by a cryptocurrency miner, and approval may result in a rush of similar applications. For these reasons and more, DMG’s application raises serious, potentially fatal concerns under section 202(e). The Department should proceed with extreme caution. It likely should deny the application or, if granting it, place conditions on it.

### **About Public Citizen**

Established in 1971, Public Citizen is a national, not-for-profit, non-partisan organization that represents the public interest generally and, even more closely relevant to this proceeding, the interests of household consumers. We are active before the Federal Energy Regulatory Commission on a wide array of energy market matters, including supporting just and reasonable rates, and promoting utilities to be accountable to the public interest. Energy Program Director Tyson Slocum also serves on the Energy and Environmental Markets Advisory Committee of the U.S. Commodity Futures Trading Commission. Our financial details are located at our web site.<sup>4</sup>

### **Public Citizen Comments**

Although the application does not say so explicitly, according to its web site DMG is engaged in what is known as cryptocurrency “mining.”<sup>5</sup> Cryptocurrencies, such as Bitcoin, are enabled through a digital distributed ledger system, called blockchain. The

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<sup>4</sup> Public Citizen, Annual Report, [www.citizen.org/about/annual-report/](http://www.citizen.org/about/annual-report/).

<sup>5</sup> <https://dmgblockchain.com/about/company>.

“blocks” in blockchain can be added through solving a complex computational problem called a proof-of-work (PoW).<sup>6</sup> PoW algorithms require significant computing power (and therefore time) to solve, a process known as “mining” the cryptocurrency.<sup>7</sup> Cryptocurrency miners operate or host vast computing networks and compete with others to be the first to solve PoWs and receive the associated financial rewards.<sup>8</sup>

Cryptocurrency mining is extraordinarily energy-intensive, requiring substantial power both to perform the calculations and to regulate the temperatures of computational devices so that they can perform optimally.<sup>9</sup> According to the Congressional Research Service, the power demand from cryptocurrency mining can “exceed the available [local] power capacity and increase customers’ electricity rates.”<sup>10</sup> Miners who do not win the competition to solve a given PoW receive nothing, meaning their energy expenditure has gone to waste.<sup>11</sup> Global power demand for cryptocurrency mining, a sector arguably still in its infancy, is estimated to have been as high as 7,670 MW in 2018, equivalent to nearly 1% of all U.S. electricity generating capacity.<sup>12</sup>

The applicant, DMG, is based in British Columbia, Canada, a region that has been an epicenter of cryptocurrency mining due in part to the prevalence of inexpensive hydropower that is a feature of the Pacific Northwest. Several public utilities in neighboring Washington State have enforced moratoria on cryptocurrency mining operations, citing overcapacity of substations and increasing power demand.<sup>13</sup> These issues were the subject of a hearing before the U.S. Senate Committee on Energy and

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<sup>6</sup> Congressional Research Service, *Bitcoin, Blockchain, and the Energy Sector* (2019), <https://crsreports.congress.gov/product/pdf/R/R45863>.

<sup>7</sup> *Id.* at 2–3.

<sup>8</sup> *Id.* at 3.

<sup>9</sup> *Id.* at 4.

<sup>10</sup> *Id.* at i.

<sup>11</sup> *Id.* at 3.

<sup>12</sup> *Id.* at 6.

<sup>13</sup> *Id.* at 13.

Natural Resources, where the general manager of a Washington State electric utility noted that “the energy intensity or usage per square-foot is staggering,” and observed that “with cryptocurrency mining the loads can and do move on a moment’s notice” and “can morph in size at a moment’s notice” due to the frequent housing of mining operations in mobile storage containers.<sup>14</sup>

The Department should proceed on this application with extreme caution. Several factors provide strong reason to suspect that a grant of the application would “impair the sufficiency of electric supply within the United States” and possibly “impede the coordination in the public interest of facilities subject to the jurisdiction of the Commission,”<sup>15</sup> including the “staggering” and wasteful energy demands of cryptocurrency mining; the large and abrupt load changes that cryptocurrency mining causes; the struggle of domestic cryptocurrency miners and domestic utilities to meet the industry’s energy demands; the upward pressure cryptocurrency mining places on energy prices; and the potential that substantial electricity exports for cryptocurrency mining could interfere unjustifiably with local, state, and national efforts to convert to renewable power sources, improve energy efficiency, and engage in other measures to combat climate change.

The Department should coordinate with and invite comment from relevant U.S. states and utility districts to ascertain and consider carefully the full range of public interest concerns that this application presents. The Department also should require the applicant to detail how it maximizes energy efficiency opportunities, given the demand pressures that cryptocurrency mining poses to the grid. Considering that some areas in

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<sup>14</sup> Statement for the record of Steve Wright, at page 7 of the Committee print, August 21, 2018 hearing, “The Energy Efficiency of Blockchain and Similar Technologies,” [www.govinfo.gov/content/pkg/CHRG-115shrg31319/pdf/CHRG-115shrg31319.pdf](http://www.govinfo.gov/content/pkg/CHRG-115shrg31319/pdf/CHRG-115shrg31319.pdf)

<sup>15</sup> 16 U.S.C. § 824a(e).

the U.S. have imposed moratoria on new domestic cryptocurrency mining operations due to strains on supply and upward pressure on prices, it is critical that the Department carefully assess potential harms to U.S. consumers, electricity supply, and energy-sector priorities. If the Department grants the application, conditions may be merited. It is likely the Department should reject the application outright.

The DMG application is unique in that it represents a maiden effort by an energy-hungry cryptocurrency-mining industry to import electricity from the United States to Canada to meet its significant power demands. In this novel situation, the Department should engage in a comprehensive review to ensure the application is in the public interest. This review should include consultation with relevant state agencies and utility districts, as well as a certification that the applicant is maximizing energy saving procedures.

### **Conclusion**

The Department should grant Public Citizen's motion to intervene, and consider our comments.

Respectfully submitted,

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